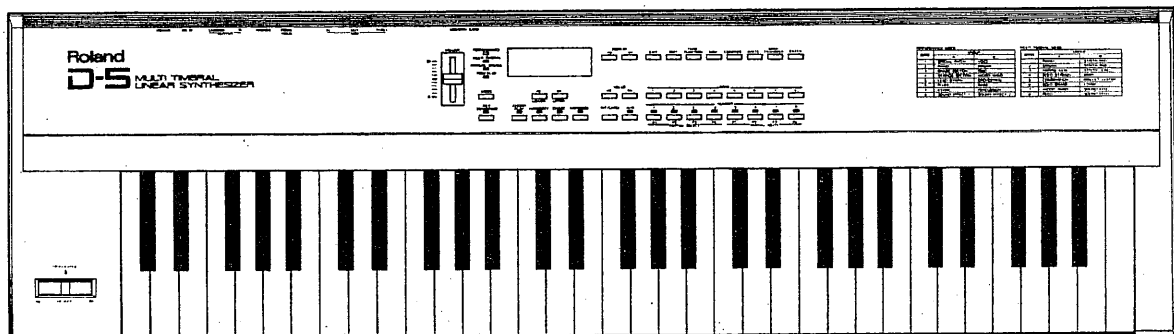


Roland

MIDI MULTI TIMBRAL LINEAR SYNTHESIZER

D-5

Owner's Manual (Play Volume)



For Nordic Countries

Apparatus containing Lithium batteries

ADVARSEL!

Lithiumbatteri. Eksplosionsfare.
Udskiftning må kun foretages af en sagkyndig,
og som beskrevet i servicemanual.

VARNING!

Lithiumbatteri. Explosionsrisk.
Får endast bytas av behörig servicetekniker.
Se instruktioner i servicemanualen.

ADVARSEL!

Lithiumbatteri. Fare for eksplosion.
Må bare skiftes av kvalifisert tekniker som
beskrevet i servicemanualen.

VAROITUS!

Lithiumparisto. Räjähdyksvaara.
Pariston saa vaihtaa ainoastaan
alan ammottimies.

For Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND MULTI TIMBRAL LINEAR SYNTHESIZER D-5

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

CLASS B

NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B

AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

A GROUP

D-5 Preset Patches (Patch Sound Chart)



Bank	No.	Patch Name	Key Mode	Effect	Used Tone(Partials)		MIDI Prog. C#	Bank	No.	Patch Name	Key Mode	Effect	Used Tone(Partials)		MIDI Prog. C#	
					Upper	Lower							Upper	Lower		
1	1	Hyper Ensemble	Dual	Chord	i 17(2)	a 33(4)	001	5	1	Fat Lead	Whole	Off	b 17(4)	*	033	
	2	Sweet Memories	Split	Harmo.	b 03(3)	b 07(4)	002		2	Square Lead	Dual	Off	Off	b 20(2)	i 46(2)	034
	3	Flamenco Guitar	Dual	Chase	i 39(3)	i 39(3)	003		3	Brassy Solo	Dual	Chord	Chord	b 18(2)	b 18(2)	035
	4	Piano Etude	Split	Arp.	a 01(3)	a 01(3)	004		4	Saw Lead	Dual	Off	Off	i 45(2)	i 45(2)	036
	5	Staccato Play	Dual	Chord	a 22(2)	i 43(4)	005		5	Doctor Solo	Dual	Off	Off	i 48(2)	i 48(2)	037
	6	C&W Harmony	Whole	Harmo.	a 03(3)	*	006		6	Clav + Organ Lead	Dual	Chase	Chase	a 11(2)	a 21(2)	038
	7	Bend me 5ths	Dual	Chase	i 30(3)	i 30(3)	007		7	Metalized Dist	Dual	Off	Off	i 43(4)	b 19(2)	039
	8	Electric Beat	Split	Arp.	i 56(2)	r 18(1)	008		8	Neat Lead	Whole	Off	Off	i 47(3)	*	040
2	1	Touch Piano	Whole	Off	i 01(4)	*	009	6	1	12 String Guitar	Dual	Off	b 38(3)	b 38(3)	041	
	2	Hammered Piano	Whole	Chase	i 02(4)	*	010		2	Pick Guitar	Whole	Off	Off	i 40(3)	*	042
	3	Synth Piano	Dual	Off	i 03(4)	a 02(2)	011		3	Pedal Steel	Whole	Off	Off	i 38(2)	*	043
	4	Honky-Tonk Piano	Whole	Off	a 04(3)	*	012		4	Backing EG	Dual	Off	Off	i 42(3)	i 42(3)	044
	5	Tapped E-Piano	Whole	Off	i 04(3)	*	013		5	Overdrive Gtr	Dual	Chase	Chase	i 43(4)	b 22(2)	045
	6	Bright EP	Whole	Off	i 05(3)	*	014		6	Synth Dulcimer	Whole	Off	Off	i 41(4)	*	046
	7	Sweeten Piano	Dual	Off	a 07(2)	i 49(2)	015		7	Funky Clav	Dual	Off	Off	a 22(2)	a 22(2)	047
	8	Choir Piano	Dual	Off	a 02(2)	i 26(3)	016		8	Wired Harpsi	Dual	Off	Off	a 17(3)	a 18(2)	048
3	1	Brassynth	Dual	Off	a 37(4)	i 45(2)	017	7	1	Melodic Koto	Dual	Chase	b 41(2)	b 41(2)	049	
	2	Soft Brass	Whole	Off	i 18(4)	*	018		2	Breath Shakuhati	Whole	Chase	Chase	i 16(4)	*	050
	3	Big ol' Brass	Dual	Off	i 17(2)	i 17(2)	019		3	Japanese Plucks	Dual	Off	Off	b 42(2)	b 43(2)	051
	4	Sweep Horns	Dual	Off	i 20(2)	i 24(2)	020		4	Trad Sho	Whole	Chase	Chase	b 44(4)	*	052
	5	Brazz	Whole	Off	i 21(4)	*	021		5	Indian Sitar	Whole	Chase	Chase	b 47(4)	*	053
	6	Low Brass	Dual	Chase	a 38(3)	a 45(3)	022		6	Incaic Flute	Dual	Off	Off	a 53(3)	a 53(3)	054
	7	Jingle Brass	Dual	Off	i 19(2)	i 52(2)	023		7	Steel Band	Whole	Chase	Chase	b 48(4)	*	055
	8	Planish Horns	Dual	Off	i 05(3)	i 20(2)	024		8	Balinese Hit!	Dual	Chase	Chase	b 52(4)	b 55(3)	056
4	1	Warm Str Fade	Whole	Off	i 09(4)	*	025	8	1	Howling Wolves	Whole	Chase	Chase	i 60(1)	*	057
	2	Deep Strings Ens	Whole	Off	i 10(4)	*	026		2	Grasshoppers	Dual	Chase	Chase	b 62(2)	b 62(2)	058
	3	Fat Strings	Dual	Off	i 13(3)	i 13(3)	027		3	Telephone Ring	Whole	Chase	Chase	b 60(1)	*	059
	4	Arco Strings	Dual	Chase	a 35(2)	a 25(3)	028		4	Bird Twitter	Dual	Chase	Chase	b 58(1)	b 58(1)	060
	5	Vibe Strings	Whole	Off	b 16(4)	*	029		5	Dive into Water	Whole	Chase	Chase	i 59(2)	*	061
	6	Sforzand Strings	Whole	Off	i 12(4)	*	030		6	Cosmic Waves	Dual	Off	Off	i 62(2)	i 62(2)	062
	7	Cosmostrings	Dual	Off	a 64(2)	a 34(3)	031		7	Random EFX	Dual	Arp.	Arp.	i 63(2)	i 63(2)	063
	8	Hollow Koto	Dual	Chase	b 41(2)	i 11(4)	032		8	Reverse Spin	Dual	Chase	Chase	b 51(2)	b 51(2)	064

Effect: Chord (Chord Play), Harmo. (Harmony), Chase (Chase), Arp. (Arpeggio) * : Same as Upper Tone

B GROUP D-5 Preset Patches (Patch Sound Chart)



Bank	No.	Patch Name	Key Mode	Effect	Used Tone(Partials)		MIDI Prog.#	Bank	No.	Patch Name	Key Mode	Effect	Used Tone(Partials)		MIDI Prog.#	
					Upper	Lower							Upper	Lower		
1	1	Voxy Women Sing	Whole	Off	i 28(4)	*	065	5	1	Orchestra Hit!	Dual	Chase	b 57(4)	b 57(4)	097	
	2	Tenor Voices	Whole	Off	i 25(4)	*	066		2	Violin-Strings	Dual	Off	Chase	a 33(4)	a 26(2)	098
	3	Delicate Voices	Dual	Off	i 26(3)	i 26(3)	067		3	Bright Brass	Dual	Off	Chase	a 40(4)	a 57(2)	099
	4	Peaceful Choir	Dual	Off	b 03(3)	a 34(3)	068		4	Concert Flute	Whole	Chase	Chase	a 49(4)	*	100
	5	Glass Voices	Whole	Off	i 29(4)	*	069		5	Pizzicato	Whole	Off	Chase	a 30(3)	*	101
	6	Harmonic Vox	Dual	Off	i 22(2)	i 27(2)	070		6	Crystal Celesta	Dual	Off	Chase	a 23(3)	a 24(2)	102
	7	Velo-Oct Synth	Dual	Off	b 14(2)	b 14(2)	071		7	Rain Harp	Whole	Chase	Chase	a 31(3)	*	103
	8	Skipping Track	Whole	Chase	b 05(4)	*	072		8	Timpani & Cymbal	Split	Arp.	Chase	r 05(2)	b 53(2)	104
2	1	Elec Organ	Whole	Off	a 09(4)	*	073	1	Fat Synth Bass	Dual	Off	Chase	i 34(2)	i 37(3)	105	
	2	Rotor Organ	Whole	Off	i 06(4)	*	074	2	Hoppin' Bass	Dual	Off	Chase	i 33(3)	b 21(3)	106	
	3	Jazzy Organ	Whole	Chase	i 08(3)	*	075	3	Fretless Bass	Dual	Off	Chase	i 36(3)	b 32(2)	107	
	4	Church Organ	Dual	Chase	a 13(3)	a 15(2)	076	4	Sync Bass	Whole	Off	Chase	i 35(2)	*	108	
	5	Pforgan	Dual	Off	a 12(1)	a 07(2)	077	5	Ac-Bass & Vibe	Split	Off	Chase	b 33(2)	b 25(2)	109	
	6	Moss Organ	Whole	Off	i 07(4)	*	078	6	Hawaiian Palm	Split	Chase	Chase	i 38(2)	b 26(1)	110	
	7	Str-organ	Dual	Chase	a 10(2)	a 35(2)	079	7	Brass Combo	Split	Off	Chase	a 37(4)	b 22(2)	111	
	8	Distorgan	Dual	Chase	i 44(4)	a 12(1)	080	8	Synth Combo	Split	Off	Chase	i 32(4)	b 24(3)	112	
3	1	Blow Sax	Dual	Chase	a 57(2)	a 54(3)	081	1	Joyful Times	Dual	Arp.	Chase	b 33(2)	b 07(4)	113	
	2	Sax Duo	Split	Off	a 58(2)	a 59(2)	082	2	Tinny Chime	Dual	Chase	Chase	i 51(3)	i 49(2)	114	
	3	Synth Harmonica	Dual	Off	i 22(2)	i 22(2)	083	3	Fantasy Bells	Dual	Chase	Chase	i 52(2)	b 01(4)	115	
	4	Tango Passion	Split	Arp.	a 16(2)	i 39(3)	084	4	Alarm Clock	Dual	Arp.	Chase	i 52(2)	b 54(2)	116	
	5	Squeeze Reed	Whole	Off	i 23(3)	*	085	5	Gruis Bell	Whole	Off	Chase	i 50(4)	*	117	
	6	Clavitrroid	Whole	Chase	i 32(4)	*	086	6	Wood Percussion	Dual	Chase	Chase	i 54(2)	b 36(2)	118	
	7	Rich Wood	Whole	Chase	i 31(4)	*	087	7	Drop Hit	Dual	Chase	Chase	i 53(4)	i 51(3)	119	
	8	Harmonicity	Dual	Off	b 02(4)	a 64(2)	088	8	Power Beat	Split	Chase	Chase	r 23(1)	i 55(1)	120	
4	1	Soft Flute	Dual	Off	i 15(3)	i 15(3)	089	1	Seashore ...	Whole	Chase	Chase	i 61(4)	*	121	
	2	Winds Ensemble	Dual	Chase	a 51(3)	a 50(2)	090	2	One Note Jam ?	Split	Chase	Chase	b 59(4)	b 59(4)	122	
	3	Recorders	Dual	Chase	a 52(2)	a 52(2)	091	3	Attack! Attack!	Whole	Chase	Chase	i 57(3)	*	123	
	4	Master Clarinet	Split	Off	b 61(3)	a 60(2)	092	4	Water Bells	Whole	Chase	Chase	b 63(3)	*	124	
	5	Bassoon-Oboe	Split	Chase	a 62(3)	a 63(2)	093	5	Scene of Battle	Split	Arp.	Chase	i 58(3)	i 58(3)	125	
	6	Blow Pipes	Whole	Chase	i 14(3)	*	094	6	Jungle Tune	Whole	Chase	Chase	b 64(4)	*	126	
	7	Breathy Ens.	Split	Off	a 54(3)	a 55(4)	095	7	Explosion	Dual	Chase	Chase	r 23(1)	r 48(1)	127	
	8	Human Whistle	Dual	Chase	a 56(2)	a 56(2)	096	8	Takeoff Jet	Whole	Chase	Chase	i 64(4)	*	128	

Effect: Chord (Chord Play), Harmo. (Harmony), Chase (Chase), Arp. (Arpeggio)

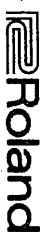
*: Same as Upper Tone

A GROUP D-5 Preset Timbres (Timbre Sound Chart)



Bank	No.	Tone Name	Number of Partials	MIDI Prog. C #	Bank	No.	Tone Name	Number of Partials	MIDI Prog. C #
1	1	a01:AcouPiano1	3	001	5	1	a33:Strings 1	4	033
	2	a02:AcouPiano2	2	002		2	a34:Strings 2	3	034
	3	a03:AcouPiano3	2	003		3	a35:Strings 3	2	035
	4	a04:Honky-Tonk	3	004		4	a36:Strings 4	3	036
	5	a05:ElecPiano1	3	005		5	a37:Brass 1	4	037
	6	a06:ElecPiano2	3	006		6	a38:Brass 2	3	038
	7	a07:ElecPiano3	2	007		7	a39:Brass 3	4	039
	8	a08:ElecPiano4	1	008		8	a40:Brass 4	4	040
2	1	a09:ElecOrgan1	4	009	6	1	a41:Trumpet 1	3	041
	2	a10:ElecOrgan2	2	010		2	a42:Trumpet 2	2	042
	3	a11:ElecOrgan3	2	011		3	a43:Trombone 1	3	043
	4	a12:ElecOrgan4	1	012		4	a44:Trombone 2	2	044
	5	a13:PipeOrgan1	3	013		5	a45:Horn	3	045
	6	a14:PipeOrgan2	3	014		6	a46:Fr Horn	2	046
	7	a15:PipeOrgan3	2	015		7	a47:Engl Horn	2	047
	8	a16:Accordion	2	016		8	a48:Tuba	2	048
3	1	a17:Harpsi 1	3	017	7	1	a49:Flute 1	4	049
	2	a18:Harpsi 2	2	018		2	a50:Flute 2	2	050
	3	a19:Harpsi 3	1	019		3	a51:Piccolo	3	051
	4	a20:Clav 1	3	020		4	a52:Recorder	2	052
	5	a21:Clav 2	2	021		5	a53:Pan Pipes	3	053
	6	a22:Clav 3	2	022		6	a54:Bottleblow	3	054
	7	a23:Celesta 1	3	023		7	a55:Breathpipe	4	055
	8	a24:Celesta 2	2	024		8	a56:Whistle	2	056
4	1	a25:Violin 1	3	025	8	1	a57:Sax 1	2	057
	2	a26:Violin 2	2	026		2	a58:Sax 2	2	058
	3	a27:Cello 1	3	027		3	a59:Sax 3	2	059
	4	a28:Cello 2	2	028		4	a60:Clarinet 1	2	060
	5	a29:Contrabass	2	029		5	a61:Clarinet 2	3	061
	6	a30:Pizzicato	3	030		6	a62:Oboe	3	062
	7	a31:Harp 1	3	031		7	a63:Bassoon	2	063
	8	a32:Harp 2	2	032		8	a64:Harmonica	2	064

B GROUP D-5 Preset Timbres (Timbre Sound Chart)



Bank	No.	Tone Name	Number of Partials	MIDI Prog. C #	Bank	No.	Tone Name	Number of Partials	MIDI Prog. C #
1	1	b01:Fantasy	4	065	5	1	b33:Vibe	2	097
	2	b02:Harmo Pan	4	066		2	b34:Glock	3	098
	3	b03:Chorale	3	067		3	b35:Marimba	3	099
	4	b04:Glasses	3	068		4	b36:Xylophone	2	100
	5	b05:Soundtrack	4	069		5	b37:Guitar 1	3	101
	6	b06:Atmosphere	4	070		6	b38:Guitar 2	3	102
	7	b07:Warm Bell	4	071		7	b39:Elec Gtr 1	4	103
	8	b08:Space Horn	4	072		8	b40:Elec Gtr 2	4	104
2	1	b09:Echo Bell	3	073	6	1	b41:Koto	2	105
	2	b10:Ice Rains	4	074		2	b42:Shamisen	2	106
	3	b11:Oboe 2002	2	075		3	b43:Jamisen	2	107
	4	b12:Echo Pan	2	076		4	b44:Sho	4	108
	5	b13:Bell Swing	3	077		5	b45:Shakuhachi	4	109
	6	b14:Reso Synth	2	078		6	b46:WadaikoSet	4	110
	7	b15:Steam Pad	3	079		7	b47:Sitar	4	111
	8	b16:VibeString	4	080		8	b48:Steel Drum	4	112
3	1	b17:Syn Lead 1	4	081	7	1	b49:Tech Snare	4	113
	2	b18:Syn Lead 2	2	082		2	b50:Elec Tom	4	114
	3	b19:Syn Lead 3	2	083		3	b51:Reverse Cym	2	115
	4	b20:Syn Lead 4	2	084		4	b52:Ethno Hit	4	116
	5	b21:Syn Bass 1	3	085		5	b53:Timpani	2	117
	6	b22:Syn Bass 2	2	086		6	b54:Triangle	2	118
	7	b23:Syn Bass 3	2	087		7	b55:Wind Bell	3	119
	8	b24:Syn Bass 4	3	088		8	b56:Tube Bell	4	120
4	1	b25:AcouBass 1	2	089	8	1	b57:Orche Hit	4	121
	2	b26:AcouBass 2	1	090		2	b58:Bird Tweet	1	122
	3	b27:ElecBass 1	2	091		3	b59:OneNoteJam	4	123
	4	b28:ElecBass 2	2	092		4	b60:Telephone	1	124
	5	b29:SlapBass 1	2	093		5	b61:Typewriter	2	125
	6	b30:SlapBass 2	3	094		6	b62:Insect	2	126
	7	b31:Fretless 1	4	095		7	b63:WaterBalls	3	127
	8	b32:Fretless 2	2	096		8	b64:JungleTune	4	128

D-5 Preset Tones

a GROUP

No.	Tones	Number of Partials
01	AcouPiano1	3
02	AcouPiano2	2
03	AcouPiano3	2
04	Honky-Tonk	3
05	ElecPiano1	3
06	ElecPiano2	3
07	ElecPiano3	2
08	ElecPiano4	1
09	ElecOrgan1	4
10	ElecOrgan2	2
11	ElecOrgan3	2
12	ElecOrgan4	1
13	PipeOrgan1	3
14	PipeOrgan2	3
15	PipeOrgan3	2
16	Accordion	2
17	Harpsi 1	3
18	Harpsi 2	2
19	Harpsi 3	1
20	Clav 1	3
21	Clav 2	2
22	Clav 3	2
23	Celesta 1	3
24	Celesta 2	2
25	Violin 1	3
26	Violin 2	2
27	Cello 1	3
28	Cello 2	2
29	Contrabass	2
30	Pizzicato	3
31	Harp 1	3
32	Harp 2	2
33	Strings 1	4
34	Strings 2	3
35	Strings 3	2
36	Strings 4	3
37	Brass 1	4
38	Brass 2	3
39	Brass 3	4
40	Brass 4	4
41	Trumpet 1	3
42	Trumpet 2	2
43	Trombone 1	3
44	Trombone 2	2
45	Horn	3
46	Fr Horn	2
47	Engl Horn	2
48	Tuba	2
49	Flute 1	4
50	Flute 2	2
51	Piccolo	3
52	Recorder	2
53	Pan Pipes	3
54	Bottleblow	3
55	Breathpipe	4
56	Whistle	2
57	Sax 1	2
58	Sax 2	2
59	Sax 3	2
60	Clarinet 1	2
61	Clarinet 2	3
62	Oboe	3
63	Bassoon	2
64	Harmonica	2

b GROUP

No.	Tones	Number of Partials
01	Fantasy	4
02	Harmo Pan	4
03	Chorale	3
04	Glasses	3
05	Soundtrack	4
06	Atmosphere	4
07	Warm Bell	4
08	Space Horn	4
09	Echo Bell	3
10	Ice Rains	4
11	Oboe 2002	2
12	Echo Pan	2
13	Bell Swing	3
14	Reso Synth	2
15	Steam Pad	3
16	VibeString	4
17	Syn Lead 1	4
18	Syn Lead 2	2
19	Syn Lead 3	2
20	Syn Lead 4	2
21	Syn Bass 1	3
22	Syn Bass 2	2
23	Syn Bass 3	2
24	Syn Bass 4	3
25	AcouBass 1	2
26	AcouBass 2	1
27	ElecBass 1	2
28	ElecBass 2	2
29	SlapBass 1	2
30	SlapBass 2	3
31	Fretless 1	4
32	Fretless 2	2
33	Vibe	2
34	Glock	3
35	Marimba	3
36	Xylophone	2
37	Guitar 1	3
38	Guitar 2	3
39	Elec Gtr 1	4
40	Elec Gtr 2	4
41	Koto	2
42	Shamisen	2
43	Jamisen	2
44	Sho	4
45	Shakuhachi	4
46	WadaikoSet	4
47	Sitar	4
48	Steel Drum	4
49	Tech Snare	4
50	Elec Tom	4
51	Revrse Cym	2
52	Ethno Hit	4
53	Timpani	2
54	Triangle	2
55	Wind Bell	3
56	Tube Bell	4
57	Orche Hit	4
58	Bird Tweet	1
59	OneNoteJam	4
60	Telephone	1
61	Typewriter	2
62	Insect	2
63	WaterBells	3
64	JungleTune	4

D-5 Preset Tones

f GROUP

No.	Tones	Number of Partials
01	Closed High Hat-1	1
02	Closed High Hat-2	1
03	Open High Hat-1	2
04	Open High Hat-2	2
05	Crash Cymbal	2
06	Crash Cymbal (short)	1
07	Crash Cymbal (mute)	1
08	Ride Cymbal	2
09	Ride Cymbal (short)	1
10	Ride Cymbal (mute)	1
11	Cup	2
12	Cup (mute)	1
13	China Cymbal	2
14	Splash Cymbal	1
15	Bass Drum-1	2
16	Bass Drum-2	1
17	Bass Drum-3	2
18	Bass Drum-4	1
19	Snare Drum-1	1
20	Snare Drum-2	1
21	Snare Drum-3	1
22	Snare Drum-4	2
23	Snare Drum-5	1
24	Snare Drum-6	1
25	Rim Shot	1
26	Brush-1	2
27	Brush-2	2
28	High Tom Tom-1	1
29	Middle Tom Tom-1	1
30	Low Tom Tom-1	1
31	High Tom Tom-2	1
32	Middle Tom Tom-2	1
33	Low Tom Tom-2	1
34	High Tom Tom-3	2
35	Middle Tom Tom-3	2
36	Low Tom Tom-3	2
37	High Pitch Tom Tom-1	1
38	High Pitch Tom Tom-2	1
39	Hand Clap	1
40	Tambourine	1
41	Cowbell	1
42	High Bongo	1
43	Low Bongo	1
44	High Conga (mute)	1
45	High Conga	1
46	Low Conga	1
47	High Timbale	1
48	Low Timbale	1
49	High Agogo	1
50	Low Agogo	1
51	Cabasa	1
52	Maracas	1
53	Short Whistle	2
54	Long Whistle	2
55	Quijada	3
56	Claves	1
57	Castanets	2
58	Triangle	2
59	Wood Block	1
60	Bell	2
61	Native Drum-1	1
62	Native Drum-2	1
63	Native Drum-3	1
OFF		0

i GROUP

No.	Tones	Number of Partials
01	TouchPiano	4
02	Loud Piano	4
03	Syn Piano	4
04	Tapped EP	3
05	E-XPiano	3
06	FulloutOrg	4
07	Moss Organ	4
08	JazzyOrgan	3
09	Warm Pad	4
10	DeepStrngs	4
11	Hollow Pad	4
12	Sfz.Strngs	4
13	Octave Str	3
14	Blow Pipes	3
15	Soft Flute	3
16	Shaku 8	4
17	Brass Pad	2
18	Soft Brass	4
19	Velo Brass	2
20	Touch Horn	2
21	Brass Razz	4
22	Harm Syn	2
23	Squeezzy	3
24	Reso Sweep	2
25	Voxy Men	4
26	Syn Choir	3
27	Harpsi-Vox	2
28	Voxy Women	4
29	GlassVoice	4
30	Poly Synth	3
31	Rich Wood	4
32	Clavitrroid	4
33	Thumb Funk	3
34	Funk Bass	2
35	Sync Bass	2
36	Slide Bass	3
37	Mini Bass	3
38	PedalSteel	2
39	Acous Gtr	3
40	PickGuitar	3
41	SynDulciez	4
42	Velo Gtr	3
43	Overdrive	4
44	Distortion	4
45	Saw Lead	2
46	SquareSolo	2
47	Horn Lead	3
48	DoctorSolo	2
49	Mild Bell	2
50	Gruis Bell	4
51	Syn Chime	3
52	Jingle	2
53	Drop Hit	4
54	NativePerc	2
55	Power Kick	1
56	Tek Snare	2
57	Space War	3
58	'Commando'	3
59	Bubble Gum	2
60	LonelyWolf	1
61	Seashore	4
62	CosmicWave	2
63	Efx	2
64	Airport	4

CONTENTS

[PLAY volume]

Thank you for purchasing the Roland D-5 Multi Timbral Linear Synthesizer.

The D-5, in addition to being used in keyboard performance as a linear synthesizer, can also perform as a multi sound module under the control of a sequencer. To make the best use of this unit, read the owner's manuals (PLAY/ EDIT) carefully.

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II

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III

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III

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III

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III

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For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

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INTRODUCTION

BEFORE ACTUALLY PLAYING THE D-5

This section includes important notes and provides a basic explanation of the D-5.

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IMPORTANT NOTES

When employing an AC adaptor, make certain you use only one that has been supplied by the manufacturer. Use of any other power adaptor could result in malfunction or damage.

Concerning the Power Supply

- Whenever you make any connections with other devices, always turn off the power to all equipment first. This will help in preventing malfunction, and damage to speakers.
- Do not force the unit to share the same power outlet as one used for distortion producing devices (such as motors, variable lighting devices). Be sure to use a separate power outlet.
- Before using the AC adaptor, always make certain the voltage of the available power supply conforms to its rating.
- Do not place heavy objects onto, step on, or otherwise risk causing damage to the power cord.
- Whenever you disconnect the AC adaptor from the outlet, always grasp it by the plug, to prevent internal damage to the cord and the hazard of possible short circuits.
- If the unit is not to be used for a long period of time, unplug the cord from the socket.

Concerning Placement

- Avoid using or storing the unit in the following places, as damage could result.
 - Places subject to extremes in temperature. (Such as under direct sunlight, near heating units, above equipment generating heat, etc.)
 - Places near water and moisture. (Baths, washrooms, wet floors, etc.) Places otherwise subject to high humidity.
 - Dusty environments.
 - Places where high levels of vibration are produced.
- Should the unit be operated nearby television or radio receivers, TV pictures may show signs of interference, and static might be heard on radios. In such cases, move the unit out of proximity with such devices.

Maintenance

- For everyday cleaning, wipe the unit with a soft dry cloth, or one that is dampened slightly. To remove dirt that is more stubborn, wipe using a mild, neutral detergent. Afterwards, make sure to wipe thoroughly with a soft cloth.
- Never apply benzene, thinners, alcohol or any like agents, to avoid the risk of discoloration and deformation.

Other Precautions

- Protect the unit from strong impact.
- Avoid getting any foreign objects (coins, wire, etc.), or liquids (water, drinks, etc.) into the unit.
- A certain small amount of heat will be radiated from the unit, and thus should not be considered abnormal.
- Before using the unit in a foreign country, check first with your local Roland Service Station.
- At any time that you notice a malfunction, or otherwise suspect there is damage, immediately refrain from using the unit. Then contact the store where bought, or the nearest Roland Service Station.

Concerning Memory Backup

- Within the unit is contained a battery which serves in maintaining the contents of memory while the main power is off. The normal life of this battery is 5 years or more, but it is strongly recommended that you change it every 5 years as a rule. When it is time to change the battery, contact a Roland Service Station.

* The first time you need to change the battery could occur before 5 years have passed.

- When the battery gets weak the following will appear in the display. By this time, it is possible that the contents of memory have already been lost.
"Check Internal Battery"
- Please be aware that the contents of memory may at times be lost; when sent for repairs or when by some chance a malfunction has occurred. Important data should be saved on Memory Card, or written down on paper. During repairs, due care is taken to avoid the loss of data, however, in certain cases, such as when circuitry related to memory itself is out of order, we regret that it may be impossible to restore the data.

1

2

1 BENDER (Bender Lever)

This allows you to increase or decrease the pitch or control vibrato effects.

2 VOLUME (Volume Slider)

This adjusts the overall volume of the D-5, as output from the Output or Headphone jack.

3 MODE (Mode Button)

Press this to change the D-5's Play mode. Each time you press the button, the changes of mode revolve as such : Performance → Multi Timbral → Manual Drums → ROM Play → Performance



4 Mode Indicator

A Mode Indicator lights up when the relevant Play mode is selected with the Mode Button.

5 Display (Display Window)

This shows the current condition of the D-5.

6 DISPLAY (Display Buttons)

Use these buttons to change displays. Use  button to advance the display and  to reverse.

7 EXIT (Exit Button)

Press this button to return to the Play mode from any other mode.

8 EDIT (Edit Button)

Press this to enter the Editing mode.

9 TUNE/FUNCTION**(Tune/Function Button)**

Press this button to change the settings of Master Tune or Memory Protect. (Which parameters can be edited differs depending on the Play mode the D-5 is in.)

10 MIDI (MIDI Button)

Press this button to edit MIDI functions.

11 COMPARE (Compare Button)

Press this to compare the edited data with the original.

12 WRITE (Write Button)

Press this to enter the Writing mode.

13 DATA TRANSFER**(Data Transfer Button)**

Press this button to perform data transfer.

14 ENTER (Enter Button)

Press this to execute Editing, Writing or Data Transfer.

15 BANK (Bank Buttons)

In Play mode (Performance / Multi Timbral), these buttons can select a Sound, while they function differently in the other operation modes.

16 NUMBER (Number Buttons)

In Play mode (Performance / Multi Timbral), these buttons can select a Sound, while they function differently in the other operation modes.

17 A/B Button

This selects A or B group for Patches/Timbres.

18 INT/CARD (Internal/Card Button)

This selects the Internal memory or Card memory.

19 VALUE (Value Button)

Use this to change values of a parameter. Pressing ◀ decreases the value and pressing ▶ increases them.

20 ARPEGGIO (Arpeggio Button)

Press this button to turn on or off the Arpeggio effect used in the Performance mode. When the Arpeggio effect is on, the indicator is lit.

21 CHASE (Chase Button)

Press this to turn on or off the Chase effect used in the Performance mode. When the Chase effect is on, the indicator is lit.

22 HARMONY (Harmony Button)

Press this button to turn on or off the Harmony effect used in the Performance mode. When the Harmony is on, the indicator is lit.

23 CHORD PLAY (Chord Play Button)

Press this button to turn on or off the Chord Play function used in the Performance mode. When Chord Play is on, the indicator is lit.

24 ◀/▶ (Cursor Button)

Use these buttons to select a parameter in the display, etc.

25 KEY TRANSPOSE

(Key Transpose Button)

Press this button to transpose the pitch of the keyboard. While the Key Transpose is being performed, the indicator is lit.

26 OUTPUT (Output Jacks)

These are output jacks for connecting to an amplifier, etc. During rhythm performance or Multi Timbral mode, these jacks will output signals in stereo.

27 PHONES (Headphones Jack)

Connect stereo headphones to this jack. Optimum are those of an impedance of from 8 to 150 ohms. Even when headphones are being used, the Output Jacks still send signals.

28 PEDAL HOLD (Pedal Hold Jack)

By connecting an optional pedal switch (DP-2, DP-6) to this jack, the Hold effect can be controlled with the pedal.

29 MIDI Sockets

These sockets are used for connecting MIDI devices.

30 MEMORY CARD (Card Slot)

Connect a RAM or ROM card here.

31 POWER (Power Switch)

This switches the unit on or off.

32 AC Adaptor Jack

Connect an AC adaptor (an accessory) here.

AN OVERVIEW OF THE D-5

Before going on to "Playing the D-5" in the following section, carefully read the following explanation.

1. Features

- **LA Synthesis**

The D-5 is equipped with sound modules employing LA (Linear Arithmetic) synthesis, widely acclaimed since adoption with the D-50 and D-10. Whether it be the fatter sounds normally associated with analog synthesizers, or the sharp attacks unique to digital synthesis, you now have a great deal of expressive freedom over a wide range of sound creation possibilities.

- **Performance Mode and Multi Timbral Mode**

The D-5 has two main modes ; Performance Mode and Multi Timbral Mode. The Performance mode is for using the D-5 as a keyboard instrument, while the Multi Timbral mode allows you to enjoy ensemble performances when connected with an external MIDI sequencer.

- **Multi Timbral Mode**

The Multi Timbral mode turns the D-5 into eight independent synthesizer modules plus a rhythm sound module. The D-5 can play up to 32 voices at the same time, which can be used in any setup you like respective to each module.

- **Tones**

A Tone is the basic unit of a sound. The D-5's memory stores 128 different Preset Tones, 64 user-programmed Tones, and 63 Preset Rhythm Tones. Also, optional memory cards (M-256D, M-256E) can be used for saving original sound libraries for ongoing use.

- **Rhythm Tones**

As well as the 63 preset rhythm tones supplied in internal memory, 22 more original rhythm tones you program can be used for the Rhythm section. Each rhythm tone can have different Pan and Level settings as desired, so output at any desired stereo balance is possible.

● **Patch Effect Functions**

The Performance mode of the D-5 allows you to use the Chord Play, Harmony, Chase and Arpeggio functions which create interesting performance effects. These can be set individually in each Patch, resulting in the optimum effect for each sound.

2. Partials and Maximum Voices

The D-5 can produce a maximum of 32 voices, or more precisely, 32 Partials, at the same time.

A Partial is the smallest unit of sound which goes toward making a Tone within the D-5. Each Tone can consist of from one to four Partials. Quite simple Tones can be made using only 1 Partial, but it is through combining multiple Partials that you are able to obtain a great variety of high-quality sounds.

The maximum number of voices able to be produced simultaneously will differ, depending on the number of Partials that have been set for any chosen Tone. For example, Tones using two Partials provide 16 voices, whereas with Tones using four Partials it would be 8 voice polyphonic.

In the Multi Timbral mode, which allows you to use more than one Tone at the same time, the 32 voices can be assigned as necessary to each sound module (Part), allowing you use voices effectively without wasting them. It is important that you get a good understanding of these concepts concerning sound usage.

3. Using the D-5 Owner's Manuals

There are two separate volumes ; PLAY and EDIT.

PLAY volume

This volume explains how to play the D-5, and other functions including basic editing. There are three sections in the PLAY volume, as follows.

- **Section I : Let's Play the D-5**

This section describes how to use the D-5 on its own ; for instance, power-up, using the performance controlling functions, etc.

- **Section II : Performance via MIDI**

This section describes the basic concept of MIDI and how to use MIDI devices in the Multi Timbral or Performance mode.

- **Section III : Let's change the sound**

This section refers to simple editing for Tones or functions.

EDIT volume

This volume explains all the parameters and procedures necessary for sound creation. An Index is provided for quick access to the desired information. The EDIT volume consists of an Introduction and three Sections as follows.

- **Introduction**

This provides an outline of the D-5's basic procedures.

- **Section I : System Settings**

This explains basic system settings such as Tune/Function and MIDI functions.

- **Section II : Patch/Timbre Settings**

This explains editing procedures for Patches and Timbres.

- **Section III : Tone Settings**

This covers editing procedures for Tones, general concepts related to sound, and the key points in sound creation.

MEMO

SECTION I

LET'S PLAY THE D-5

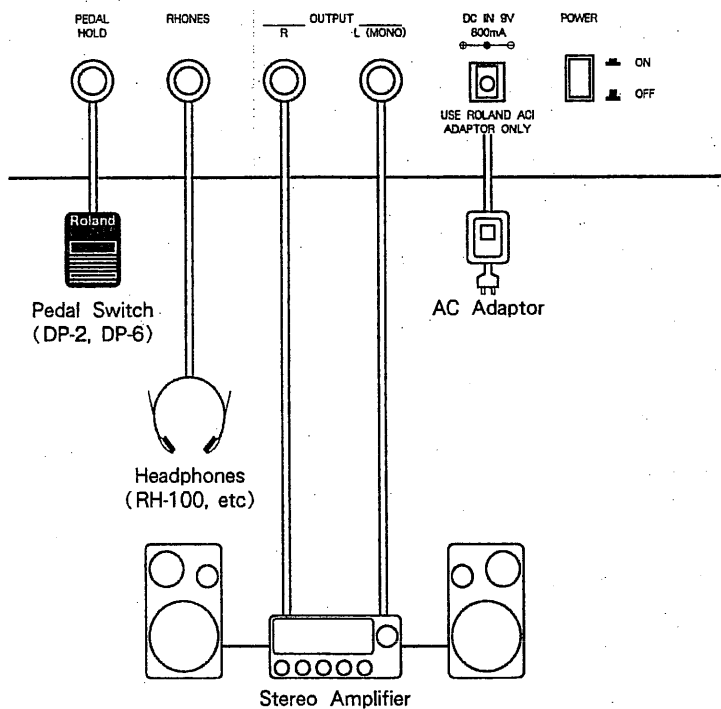
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g. Hold pedal	34		

1. Connections

1. Connections

Connect the Output jack on the rear of the D-5 to the Input jack on an amplifier or mixer.

Before connecting the units, switch all the units off. (Otherwise, speaker damage or other malfunction could result.) When using the D-5 for mono output, connect the L (MONO) jack to an external unit. For stereo output, use a stereo amplifier or mixer. To use headphones, connect their plug to the Headphones jack on the rear of the unit.



* The D-5 does not include a power amplifier or speaker, and therefore cannot be played on its own.

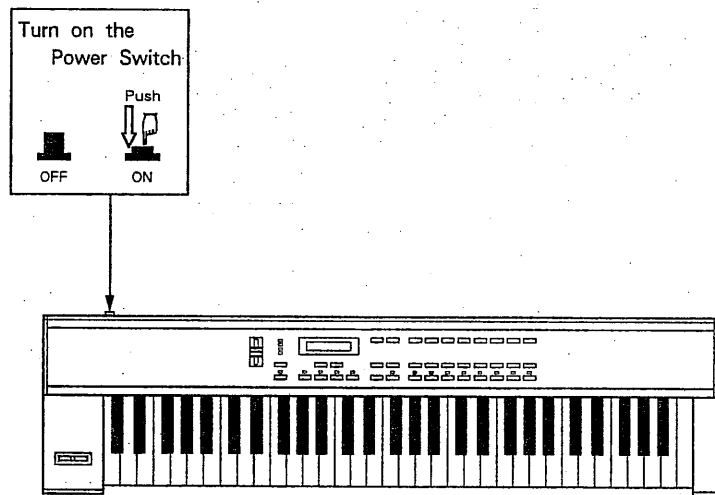
* To make the best use of this unit, use it in stereo.

2. Power-up and Stand-by

Switch on the unit to turn to the stand-by condition.

- 1 Make sure that the D-5 is correctly and securely connected to an amplifier, power socket, etc. Then switch on the D-5, then the amplifier.

Be sure to switch on the amplifier after the D-5.



For a few seconds after the unit is switched on, the following display is shown, then it returns to the last-used Playing mode. The D-5 can be played by pressing its keys. However, the sound produced differs depending on what Play mode and sound was previously selected.

```

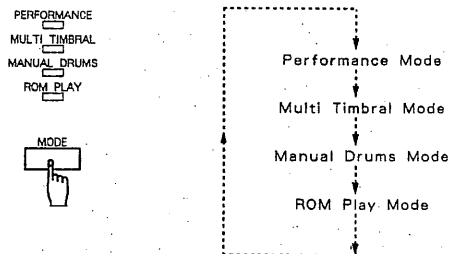
**Roland D-5**
LA Synthesizer
  
```

* The D-5 does not function for a few seconds after being switched on due to its circuitry protection feature.

* If the D-5 has been previously set to the ROM Play or Manual Drums mode, it will be automatically turned to the Multi Timbral mode when switched on.

2 Select one of the four Play modes.

Pressing the **MODE** will change the modes as follows. The Mode Indicator indicates which mode is currently selected.



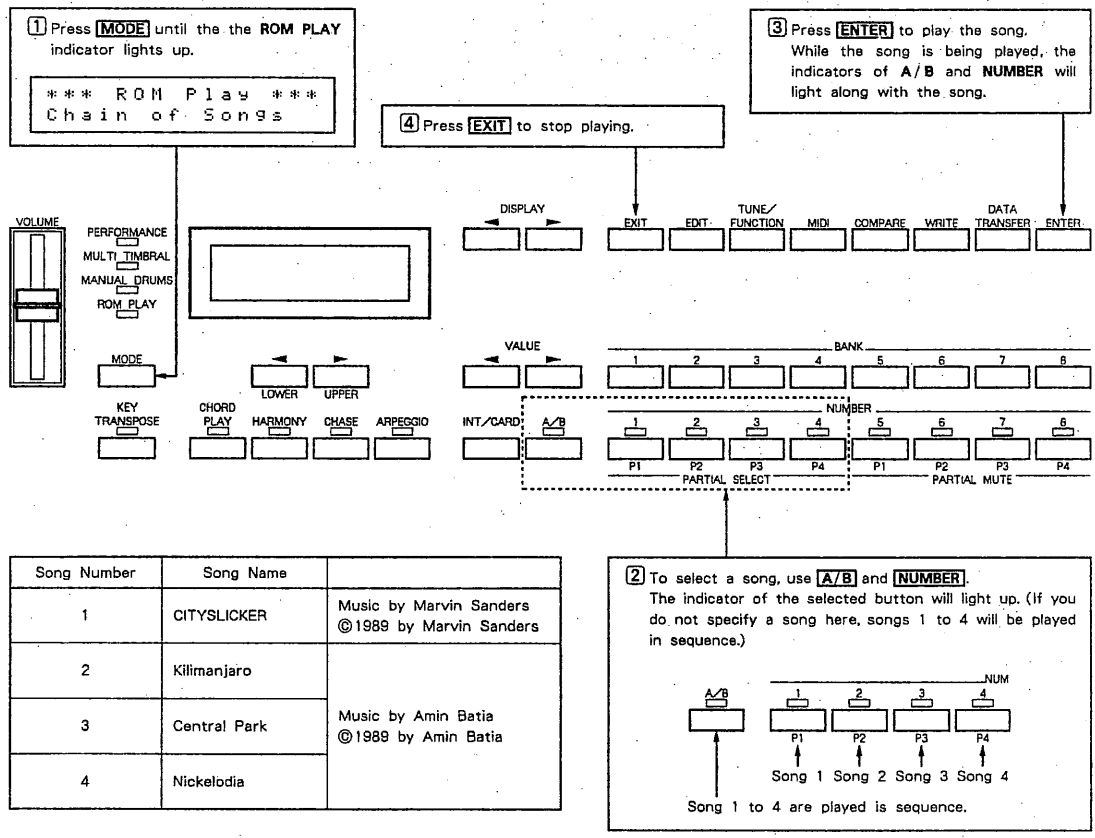
- In the Performance mode, the D-5 can be played as a normal keyboard instrument.
- The Multi Timbral mode turns the D-5 into 8 individual sound modules and a rhythm section, thus making it ideal for use with a MIDI sequencer.

The D-5 also has the Manual Drums mode which allows you to carry out a rhythm performance from the keyboard, and the ROM Play mode, which allows you to hear the demonstration-use preprogrammed data.

3. Let's Listen To the ROM Songs (ROM Play Mode)

Four different songs are preprogrammed in the D-5 so that you can experience the superb effect of the Multi Timbral function. Playing these songs is called ROM Play in this manual.

To obtain the best effect from the Multi Timbral function, use a stereo amplifier, if possible, or use stereo headphones.



* During ROM Play, the keyboard cannot be played and the Bender or other controllers cannot be used.

* The performance data of ROM Play is not sent from the MIDI OUT.

* The D-5 does not feature sequencer function, therefore, to record and playback performance data, you need a MIDI Sequencer.

4. Let's Play Various Sounds

A sound involves not only Tone but also performance controlling elements.

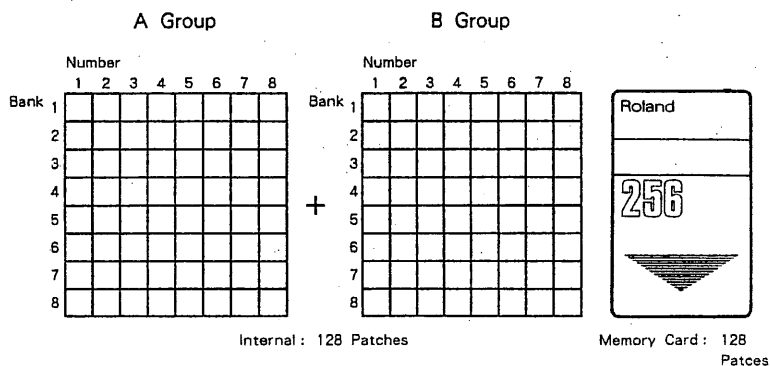
■ Patch and Timbre

In the Performance mode, the combination of Tones and the performance controlling functions that determine how to play Tones is called a Patch. Two Tones (Upper Tone and Lower Tone) are assigned to each Patch. In the Multi Timbral Mode, the same unit is called Timbre, but only one Tone is assigned to each Timbre.

a. Patch selection (Performance mode)

In the Performance mode, you can change sounds by selecting a different Patch.

128 different Patches are stored in the internal memory of the D-5. These Patches are divided into two groups, A and B, and each group contains 64 Patches which are organized according to 8 Banks and Numbers. An optional memory card (M-256D, M-256E) can also store 128 Patches. So, altogether 256 different Patches can be used on the D-5.

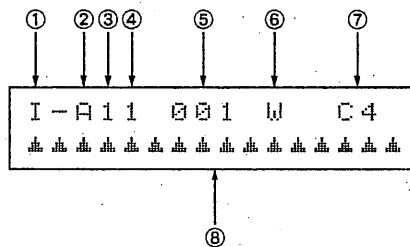


(Preset Patches are shown in "D-5 Patch Sound Chart".)

- 1** Make sure that the indicator of PERFORMANCE is lit.
 If the indicator of another mode is lit, press **MODE** until PERFORMANCE lights up.



The display shows the previous Patch data selected; before the unit was switched off. Playing the keyboard will play the Patch currently shown in the display.



- ① In the Internal memory mode, "I" appears; and "C" appears in the Card memory mode.
- ② Group
- ③ Bank
- ④ Number
- ⑤ Program Change Number (Program Change number that corresponds to the Patch currently shown in the display.)
- ⑥ Key Mode (W = Whole, D = Dual, S = Split)
- ⑦ Split Point
- ⑧ Patch Name

* A mark is not indicated at the Patch Name in the actual display.

■ Key Mode

Key Mode determines how to output two Tones, Upper and Lower Tones assigned to each Patch.

● WHOLE

Only Upper Tone is played.

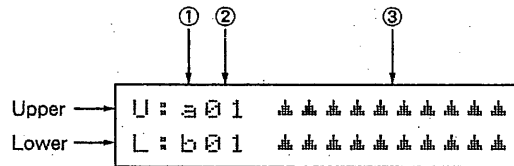
● DUAL

Both Upper and Lower Tones are played at the same time.

● SPLIT

The keyboard is split into two sections at the Split Point. Upper Tone is played in the upper section of the keyboard and Lower Tone is played in the lower section.

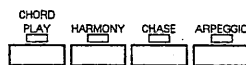
To monitor the Tones, press either of the ◀DISPLAY▶ buttons once.



- ① Tone Group
- ② Tone Number
- ③ Tone Name

■ Patch Effects

The Performance mode allows you to use Patch Effects (Chord Play, Harmony, Chase, Arpeggio) which can add interesting effects to the solo or backing performance. ON/Off and setting of each effect can be programmed in each Patch. When you select a Patch, the Effect button of the turned-on effect will light up. If you wish to turn off the effect, simply press the relevant button. See page 35 "Patch Effects" for detailed explanation about using the Patch Effects.



b. Timbre selection (Multi Timbral mode)

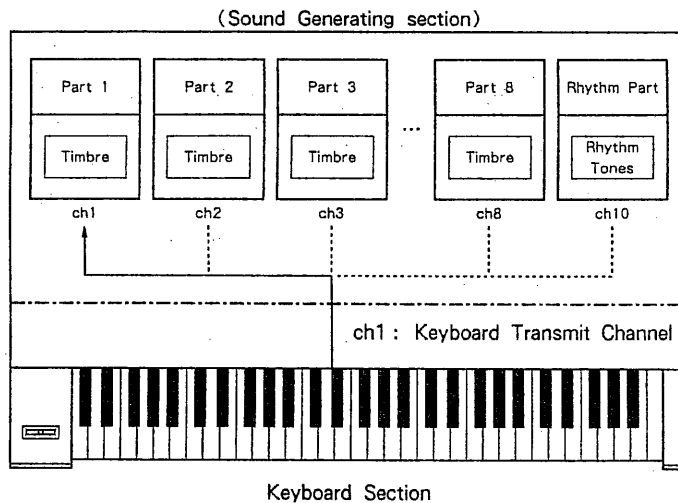
In the Multi Timbral Mode, you can change sounds by selecting a different Timbre. The Multi Timbral mode turns the D-5 into 8 individual sound modules and a rhythm section, and thus may be ideal for ensemble performance using a MIDI sequencer. The following only explains how to change Timbres in each Synthesizer Part. Read page 57 "Effective Use of the Multi Timbral Mode" for the make-up of Multi Timbre and how to use it.

Timbres are arranged in the same way as the Patches in the Performance mode. 128 Timbres are stored in the Internal memory and another 128 on an optional memory card.

■ Basic Concept of the Multi Timbral Mode

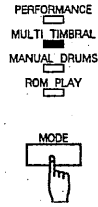
The Multi Timbral Mode allows you to assign a desired Timbre to each Synthesizer Part and control each part individually. The Timbre of the specified Part can be played and controlled by the keyboard.

* When shipped, Part 1 is assigned for the keyboard control.



Now, let's play various Timbres.

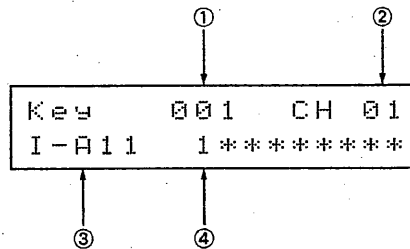
- 1 Press **MODE** to turn to the Multi Timbral Mode.



The Multi Timbral Mode has a Keyboard display and Part display (1-8). When you turn to the Multi Timbral Mode from another mode, the Part display previously used will be called.

In the Keyboard display, you can change Timbres of the Part assigned by the keyboard. The Part display allows you to change Timbres of the Part currently shown.

- 2 Press **◀/LOWER** or **UPPER/▶** to change to the Keyboard display.



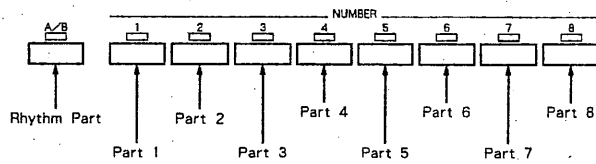
- ① Program Change Number (the Program Change number that corresponds to the Timbre number shown in the display)
- ② MIDI Transmit Channel of the keyboard
- ③ Timbre number assigned to the Part (Just like a Patch, it is represented by Internal/Memory Card, Group, Bank and Number)
- ④ Part Number that can be played by the keyboard

3 Change Timbres.

Change Timbres in the same way Patches are changed in the Performance mode.

* If you have changed to the Keyboard display after switching the unit on, Timbre number I-A11 is always shown no matter what Timbre is actually assigned to the Part played by the keyboard. That is, the Timbre shown in the display will differ from the one actually played.

The performance status of each Part is shown by the **A/B** and **NUMBER** indicators (the indicator of the Part that is producing sound is lit).



(Preset Timbres are shown in "D-5 Timbre Sound Chart".)

c. Using a memory card

There are two types of memory cards, ROM and RAM.

■ Difference between ROM and RAM cards

ROM stands for Read Only Memory meaning that it is memory specifically for reading data from. Patch and Timbre data has been written onto a ROM card. Data on a ROM card cannot be edited and is preserved safely unless the card is damaged for some reason. Optional Sound Library (PN-D10-01 etc.) is a ROM card.

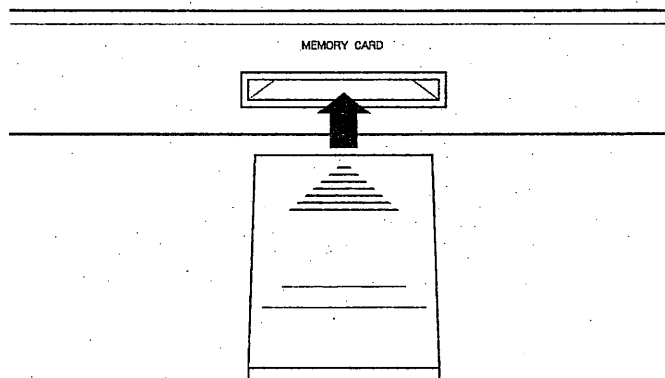
RAM stands for Random Access Memory, meaning that it is memory allowing both reading and writing. Data on a RAM card can be edited as many times as you like. A RAM card contains a battery providing backup of its data. This type of card may be used for saving any Patch/Timbre/Tone data you have programmed. Use only M-256D or M-256E (optional) for the D-5.

* No data is written on a RAM card originally. To use a brand new RAM card, copy the data in the internal memory onto the RAM card as explained on page 120 in the separate volume, EDIT.

* Previously released Sound Library Memory Card for the D-10 and D-20 (PN-D10 Series) is compatible with the D-5. However, data programmed on the D-10/D-20 does not completely match the D-5 (Patch Effects are not included in the D-10/D-20 data, etc.). If you use the D-10/D-20's data (stored on a card) on the D-5 in the Performance mode, the Patch Effects will be automatically set to same in all the Patches. In the Multi Timbral mode, however, you are free from this problem. For details, read "Compatibility with the D-10/D-20" on page 130 in the EDIT volume.

To change Patches/Timbres on a card, do as follows.

- 1 Insert a memory card into the Card Slot on the rear of the unit.



* Make sure the card is faced properly, then insert it in the correct direction.

- 2 Press **INT/CARD** to change to the Card mode.

* If no memory card is inserted or the card is not securely connected, the following message will appear. Press **EXIT** and repeat the procedure.

```
Card Not Ready
```

* If you use a memory card that contains data other than that for the D-5 or D-10/D-20, the following message will appear. Press **EXIT**, replace the card with a proper one, and repeat the procedure.

```
Wrong Card
```

- 3 **Change Patches/Timbres.**
Change Patches or Timbres in the same way as in the Internal mode.

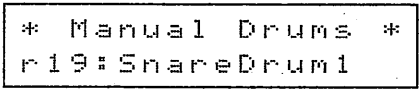
d. Rhythm performance with the keyboard (Manual Drums mode)

You can play rhythms with the keyboard.

- 1** Press **MODE** until the **MANUAL DRUMS** indicator lights up.



Now, pressing keys on the keyboard will cause the corresponding rhythm tones to sound. The display indicates the rhythm tone name for the last key pressed.



* The Rhythm Tone assignment to individual keys and the output balance can be changed if you like. See page 114 "Rhythm Tone Setup".

* To transpose the pitch of the keyboard, do as explained on page 41 "Key Transpose".

[Preprogrammed Rhythm Setup]

Rhythm tone (tone No.)	Note number	
Native Drum - 3 (r63)	97	
Native Drum - 2 (r62)	96	C7
Native Drum - 1 (r61)	95	
Ride Cymbaal (short) (r09)	94	
High Tom Tom - 3 (r34)	93	
Crash Symbal (short) (r06)	92	
Middle Tom Tom - 3 (r35)	91	
Closed High Hat - 2 (r02)	90	
Low Tom Tom - 3 (r36)	89	
Snare Drum - 6 (r24)	88	
Snare Drum - 5 (r23)	87	
Snare Drum - 4 (r22)	86	
Bass Drum - 4 (r18)	85	
Bass Drum - 3 (r17)	84	C6
Bell (r60)	83	
Wood Block (r59)	82	
High Pitch Tom Tom - 1 (r37)	81	
Triangle (r58)	80	
High Pitch Tom Tom - 2 (r38)	79	
Castanets (r57)	78	
Brush - 2 (r27)	77	
Brush - 1 (r26)	76	
Claves (r56)	75	
Cup (mute) (r12)	74	
Quijada (r55)	73	
Long Whistle (r54)	72	C5
Short Whistle (r53)	71	
Maracas (r52)	70	
Cabasa (r51)	69	
Low Agogo (r50)	68	
High Agogo (r49)	67	
Low Timbale (r48)	66	
High Timbale (r47)	65	
Low Conga (r46)	64	
High Conga (r45)	63	
High Conga (mute) (r44)	62	
Low Bongo (r43)	61	
High Bongo (r42)	60	C4
Ride Cymbal (mute) (r10)	59	
Snare Drum - 3 (r21)	58	
Crash Cymbal (mute) (r07)	57	
Cowbell (r41)	56	
Splash Cymbal (r14)	55	
Tambourine (r40)	54	
Cup (r11)	53	
China Cymbal (r13)	52	
Ride Cymbal (r08)	51	
High Tom Tom - 2 (r31)	50	
Crash Cymbal (r05)	49	
High Tom Tom - 1 (r28)	48	C3
Middle Tom Tom - 2 (r32)	47	
Open High Hat - 1 (r03)	46	
Middle Tom Tom - 1 (r29)	45	
Open High Hat - 2 (r04)	44	
Low Tom Tom - 2 (r33)	43	
Closed High Hat - 1 (r01)	42	
Low Tom Tom - 2 (r30)	41	
Snare Drum - 2 (r20)	40	
Hand Clap (r39)	39	
Snare Drum - 1 (r19)	38	
Rim Shot (r25)	37	
Bass Drum - 2 (r16)	36	C2
Bass Drum - 1 (r15)	35	

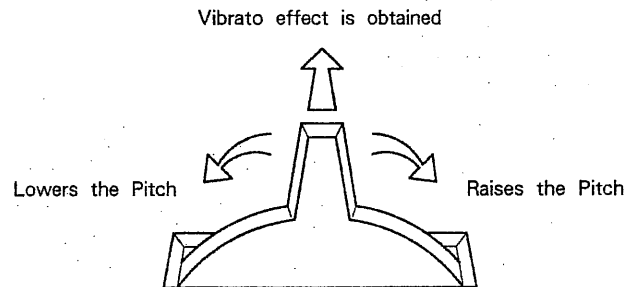
e. Dynamics (Velocity)

The volume or tone changes depending on how you play the keyboard.

- * Velocity is the strength (speed) for playing the keyboard. An optimum velocity value is set for each Tone, therefore the effect will vary with each Patch or Timbre.

f. Bender lever (Pitch bend and Modulation)

The Bender Lever will cause pitch change or a modulation effect (vibrato).



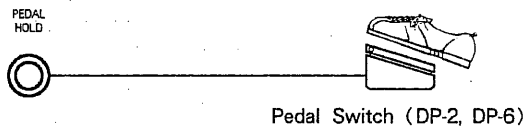
- * The depth of pitch change or vibrato effects varies in each Patch and Timbre, as an optimum value is programmed for each Patch and Timbre.

g. Hold pedal

Using an optional pedal switch (DP-2, DP-6), the Hold effect can be controlled with a pedal.

Hold is the effect that sustains the sound even after the key is released, as long as the pedal is pressed. Connect the pedal switch to the Pedal Hold jack on the rear of the unit.

The sound is sustained as long as the pedal is depressed.



- * The Hold effect may not work as you expect in some Patches or Timbres.
- * When using the Chord Play, Harmony or Arpeggio function (Patch effect), you can sustain the chord with the Hold Pedal.

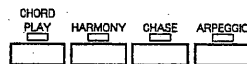
5. Patch Effects

In the Performance mode, Patch effects (Chord Play/Harmony/Chase/Arpeggio) can be used to add interesting effects to solo or backing performances. The On/Off status and settings for each effect can be programmed in each Patch. This section explains how to use each effect.

If you wish to use any of these effects, simply press the relevant button (the indicator will light up). If you wish to turn off any effect, press the relevant button again (the indicator goes out).

When you select a Patch, the Effect buttons of effects set to on will light up.

Also, when using the Chord Play, Harmony or Arpeggio function (Patch effect), you can sustain the chord with the Hold Pedal.



* More than one effect cannot be used at the same time.

* The Patch Effect cannot be obtained by the Note On messages fed into the MIDI IN.

a. Chord play

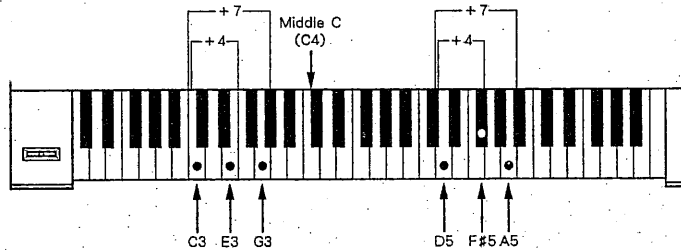
Chord (Parallel Chord)/Solo Performance.

At the Split Point set in the Patch, you can obtain a chord performance by playing a key on the upper section while playing a chord on the lower section. The chord (the chord pattern played on the lower section) will have the key pressed on the upper section as its root. If you press a key on the upper keyboard without playing a chord on the lower keyboard, only one note is played for solo performance. If you play only the lower keyboard, no sound is generated.

The same Chord Play effect can be obtained in any Key Mode.

[EXAMPLE]

Press D5 key on the upper keyboard while playing a C chord on the lower keyboard, and a D chord will be played. (Split Point : C4)



* A chord is determined by the C3 key. For instance, if you play the D chord on the lower keyboard and press the C key on the upper, the D chord will be created.

Using this function, you can play the top of a song in solo on the upper keyboard and play a chord for backing, or enjoy a fat sound solo on the upper keyboard while pressing octaves on the lower keyboard, etc.

[HOW TO USE THE HOLD PEDAL]

Press the Hold Pedal while playing a chord on the lower keyboard, and the chord can be sustained even after releasing the keys. If you keep holding the Hold Pedal down, an appropriate chord will be automatically played simply by pressing a key on the upper keyboard.

* If you change chords while holding the Hold Pedal down, the sounds will be mixed causing a strange result. To change chords, turn the Hold off (release the pedal) once.

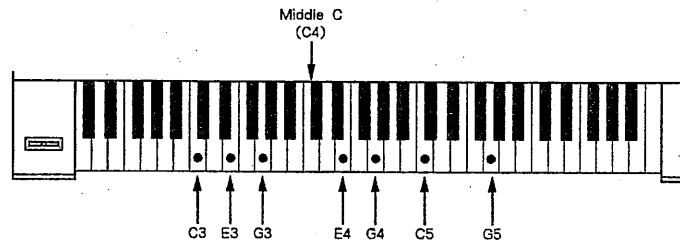
b. Harmony

This effect adds harmony to the melody line.

At the Split Point set in the Patch, you can obtain a harmony by playing a key on the upper section while playing a chord on the lower section. The harmony (an inversion of the chord played on the lower keyboard is added) will have the key pressed on the upper section as a top note. If you press a key on the upper part of the keyboard without playing a chord on the lower section, only one note is played, for use in solo performance. If you play only the lower section, no sound is generated. The same Harmony effect can be obtained in any Key Mode.

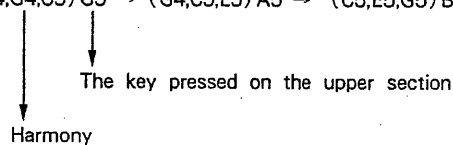
[EXAMPLE]

Press G5 key on the upper section while playing a C chord on the lower part of the keyboard, and a harmony that includes G5 as a top note is played. (Split point : C4)



By pressing a different key on the upper part of the keyboard, the harmony will be inverted as follows :

(E4,G4,C5) G5 → (G4,C5,E5) A5 → (C5,E5,G5) B5 → (C5,E5,G5) C6



* When the Key Mode is Split, the top note is played with an Upper Tone and harmony is played with a Lower Tone.

* It is possible to set the volume balance of the top note and harmony for each Patch. See page 96 "Harmony Balance".

[HOW TO USE THE HOLD PEDAL]

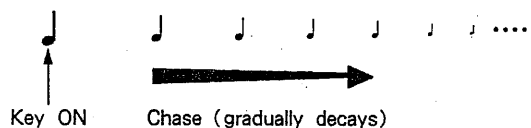
Press the Hold Pedal while playing a chord on the lower keyboard, and the chord can be sustained even after releasing the keys. If you keep holding the Hold Pedal down, the harmony chord will be automatically played simply by pressing a key on the upper keyboard.

* If you change chords while holding the Hold Pedal down, the sounds will be mixed causing a strange result. To change chords, turn the Hold off (release the pedal) once.

c. Chase

Delay - like effect is obtained.

A sound is repeated several times, like echoes, and gradually decays.



The rate of the Chase can be controlled with **◀VALUE▶** even during playing.

* A different Chase effect can be set in each Patch. For details, see pages 90, 94, and 96 .

* When the Key Mode is set to Split, the Chase effect is obtained only in Upper Tones.

d. Arpeggio

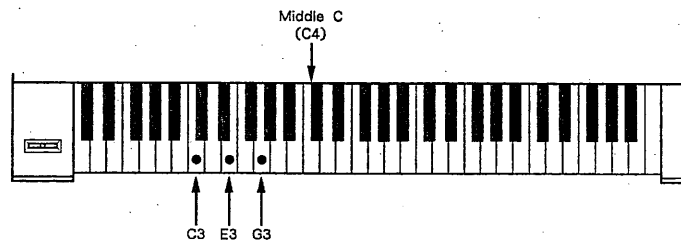
Playing a chord will create an Arpeggio.

The Arpeggio effect is obtained on the entire keyboard range when the Key mode is set to the Whole or Dual. When it is set to the Split, the Arpeggio is obtained only on the Keys played on the lower keyboard.

Performance patterns of the arpeggio will differ depending on the Arpeggio Mode of each Patch.

[EXAMPLE]

Play a chord on the keyboard, and keys are played in the sequence of C3, E3, G3, C3, E3, G3, and so on according to the setting (Arpeggio Mode) of the selected Patch. (Split Point : C4, Arpeggio Mode : UP)



The rate of the Arpeggio can be controlled with **VALUE** even while playing.

* A different Arpeggio effect can be set in each Patch. For details, see page 90 and 91.

[HOW TO USE THE HOLD PEDAL]

Press the Hold Pedal while playing a chord, and the Arpeggio will be performed even after releasing the keys.

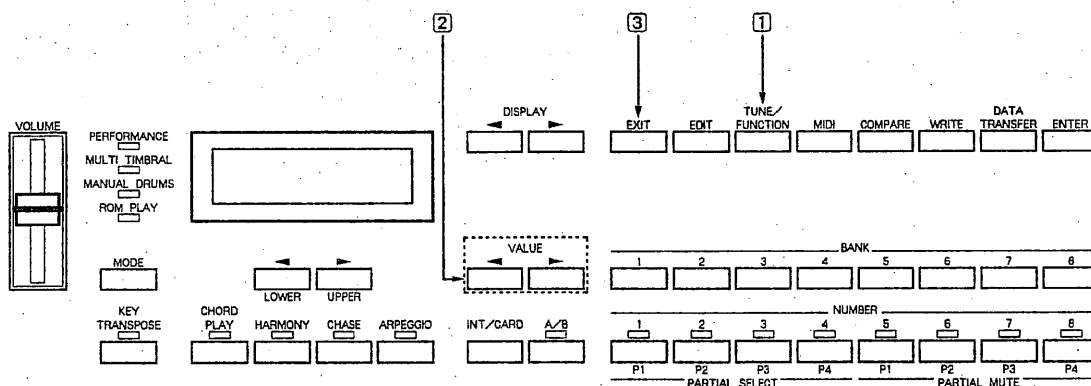
* If you change chords while holding the Hold Pedal down, the sounds will be mixed causing a strange result. To change chords, turn the Hold off (release the pedal) once.

6. Tuning and Key Transpose

Master Tune allows you to tune the D-5 to another musical instrument. Key Transpose allows you to shift the pitch of the entire keyboard.

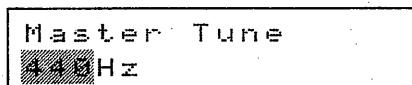
■ Master Tuning

The Master Tune function tunes overall pitch of the D-5. The Master Tuning you have set will be retained even after the unit is switched off.



- 1** Press **TUNE/FUNCTION**.

The Pitch of the A4 key is shown in Hz.



- 2** Change pitches using **VALUE**.

The Pitch can be set from 428 to 453Hz. The number in the display changes in 1Hz steps, but the pitch actually changes almost continuously.

- 3** When you have finished tuning, press **EXIT** to return to the previous display.

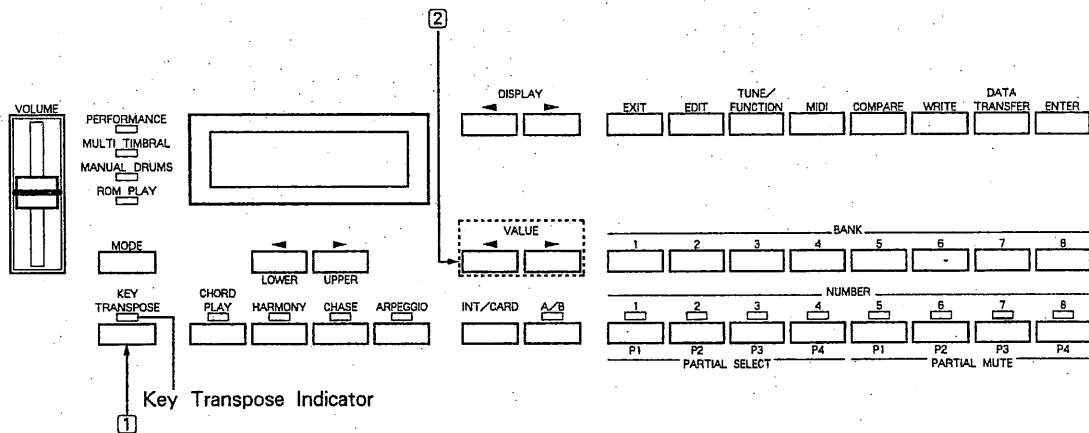
* Master Tuning is set commonly for the Performance mode and Multi Timbral mode.

* The Pitch of some Tones (PCM type sounds) may not be affected by Master Tuning.

■ Key Transpose

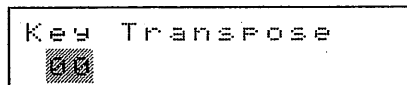
Key Transpose allows you to shift the pitch of the entire keyboard in semitone steps. Using this function, the keyboard can be played in a different key without actually changing the keys.

The Key Transpose you have set will be retained even after the unit is switched off.



- 1** Press **KEY TRANSPOSE**.

While holding the button down, the display shows as below.



- 2** While holding **KEY TRANSPOSE** down, change values using **VALUE**.

Transposition can be set from -12 to +12 (from -1 to +1 octave in semitone steps).

- 3** When you have finished transposition, release **KEY TRANSPOSE**.

When any transposition is made (when you set a value other than 00), the **KEY TRANSPOSE** Indicator on the front panel lights up.

* Key Transpose is set commonly for the Performance mode and Multi Timbral mode.

MEMO

SECTION II

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1 WHAT IS MIDI ?

This section provides a basic explanation of MIDI for using the D-5 with other MIDI - equipped units, such as sequencers, rhythm machines, synthesizers, etc. If you are not very familiar with MIDI, read this section first, then go to “**2** Effective Use of the Multi Timbral Mode” (page 57).

1. Conversation Between Musical Instruments

MIDI (Musical Instrument Digital Interface) is an international standard for communicating various messages such as musical performance messages. Via MIDI, instruments from different manufacturers or different types of equipment can communicate freely just by being connected by cable.

Information about performance events, such as pressing/releasing keys or pedals constitute MIDI messages. Playing an instrument will output the relevant MIDI messages. MIDI instruments that recognize these messages will then play as if they were actually being manually played.

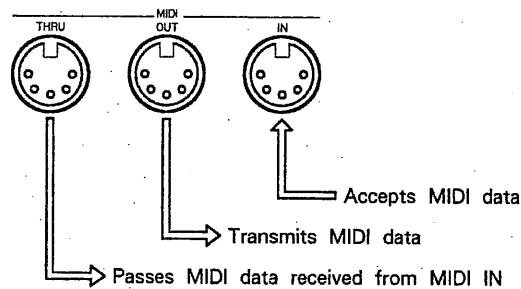
2. What Makes MIDI Conversation Possible

This explains how MIDI messages are sent and received.

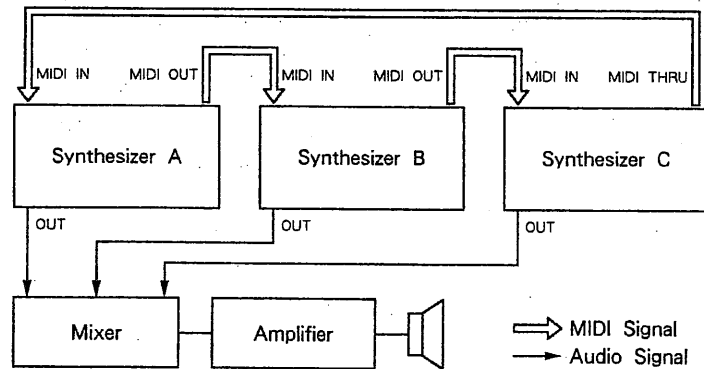
a. MIDI sockets

MIDI messages are handled fully digitally. That is why many kinds of messages can be sent using only one cable.

A device featuring MIDI usually has three sockets; MIDI IN, MIDI OUT and MIDI THRU. MIDI messages travel between one MIDI unit and another through these MIDI sockets, and their interconnecting MIDI cables.



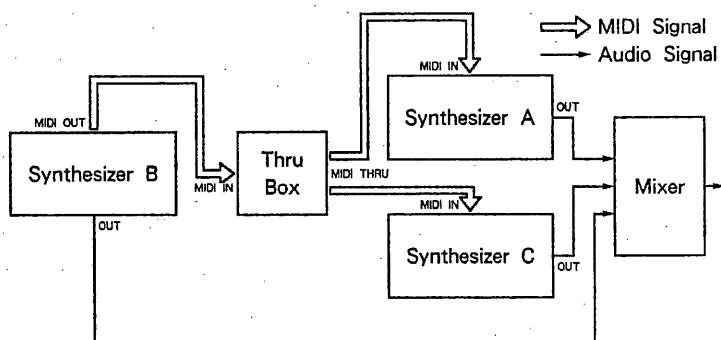
For instance, consider three MIDI synthesizers that are connected as shown below.



When synthesizer A is played, its performance information is sent from its MIDI OUT. Synthesizer B will play based on the messages it receives from A. However, synthesizer C will not play since it is connected to the MIDI OUT of synthesizer B. This is because messages fed into MIDI IN are not output again from MIDI OUT. So, when playing A only the two, A and B, will play at the same time.

On the other hand, when synthesizer B is played, it will transmit the information from its MIDI OUT, causing synthesizer C to play. And, an exact copy of the signal fed into the MIDI IN of C will be sent out from MIDI THRU, passing the information on to synthesizer A. Consequently, playing synthesizer B will cause all three synthesizers to play at the same time. By connecting MIDI instruments consecutively, with MIDI IN going to MIDI THRU to MIDI IN to MIDI THRU and so on, many numbers of instruments can be played, theoretically. This type of connection is called a series connection. However, in practice, it will cause delays or sound deterioration, particularly on instruments connected further down the line. The maximum number of instruments able to be connected may be 4 or 5.

If you wish to connect more than four instruments, use a MIDI THRU Box to divide the MIDI signal and send it to individual instruments. This kind of connection is called a star connection.



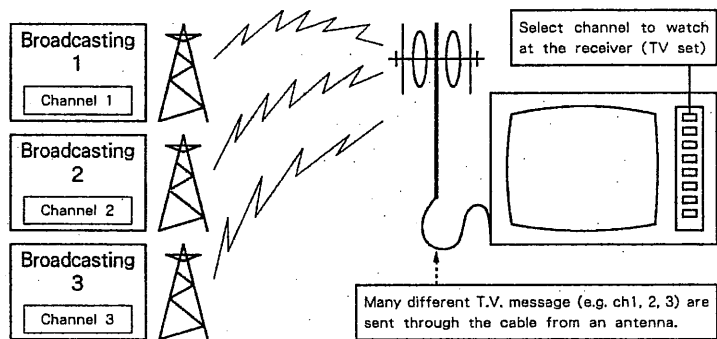
THRU Box : It has more than one THRU socket (normally four) for one MIDI IN. Used for distributing MIDI signals.

Next, if you play synthesizer C, the information of C is not transmitted because the MIDI OUT of C has no cable connected. That is, only synthesizer C will be played.

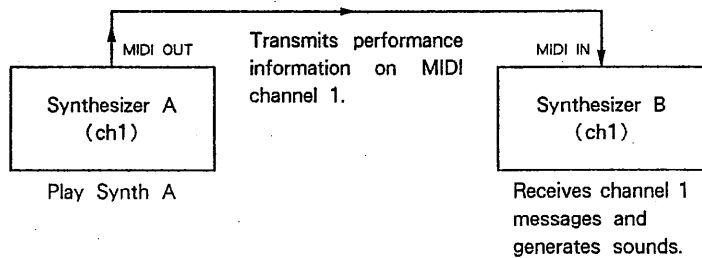
b. MIDI channel

MIDI can send different messages to more than one instrument using only one cable. MIDI channels allow this to take place.

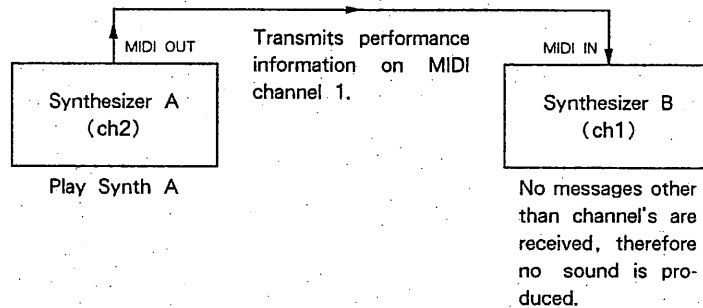
MIDI channels are similar to TV channels, in that they allow you to change channels to select desired programs. Only when the channel number of a transmitter matches that of a receiver are the messages communicated. Sixteen MIDI channels, 1 to 16, are provided. Most MIDI instruments provide means for selection for any of the 16 MIDI channels.



● When the MIDI channel of the transmitter is set to the same number as the receiver



● When the MIDI channels of the transmitter and receiver are different



■ Mode

As mentioned before, it is necessary to use the same MIDI channel on transmitter and receiver units to play in unison, but there is another way to make the receiver receive the information. This mode is called "OMNI ON", and forces the receiver to respond to all 16 MIDI channels at once.

There are also "POLY" and "MONO" modes in MIDI, which decide whether the information is to be sent as "monophonic" information or "polyphonic".

Polyphonic :

In this mode, more than one note is played at the same time. Using this mode, you can play chords.

Monophonic :

In this mode, only one note is played even if several keys are pressed at the same time. If you press the next key while a note is still playing, the current note is replaced with the next one. This may be used for creating nuance of monotone instruments, such as a wind instrument.

To choose whether to use POLY, MONO or OMNI, MIDI provides 4 possible modes.

① **MODE 1 : OMNI ON, POLY**

Receive → Receives the information on all channels and plays in polyphonic.

Transmit → Transmits the information on the set MIDI channel.

* Some MIDI devices default to this mode upon startup.

② **MODE 2 : OMNI ON, MONO**

Receive → Receives the information on all channels but will only play one note at a time.

Transmit → Transmit the information in monophonic on the set MIDI channel.

* This mode is somewhat specialized, and not often used.

③ **MODE 3 : OMNI OFF, POLY**

Receive → Receives only on the chosen MIDI channel and plays in polyphonic.

Transmit → Transmits the information on the set MIDI channel.

* This mode is often employed by most current synthesizers.

④ **MODE 4 : OMNI OFF, MONO**

Receive → Receives the information on Specific MIDI channel(s), and will only play one note per channel.

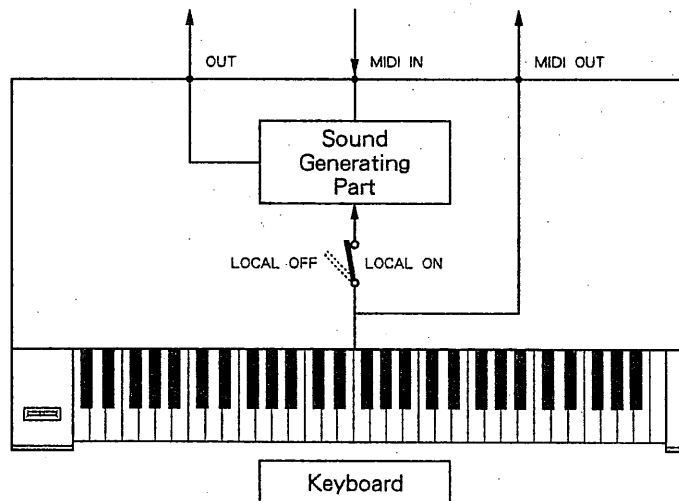
Transmit → Transmits the information on specific MIDI channel(s) and will play only one note per channel.

* This mode is used for controlling several monophonic synthesizers with one polyphonic master keyboard ; or with guitar synthesizers.

c. Local control

The Local Control function can separate the keyboard section from the sound module section within a MIDI instrument.

The basic structure of synthesizers includes the keyboard section and the sound generating part. The information generated by the keyboard usually goes to the sound generating part to play a sound (Local On). This connection is broken if the Local switch is OFF. However, even if LOCAL is Off, the MIDI OUT connection will still operate, and also the information received through MIDI IN will still play the internal sound generator. LOCAL Off is convenient when controlling the synthesizer from an external controller as a sound module, or using only the keyboard section as a MIDI keyboard controller.



d. Rhythm performance and MIDI

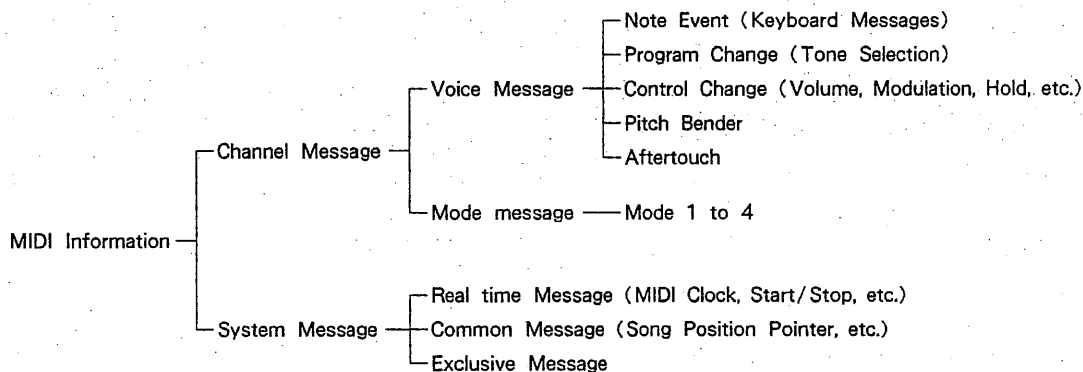
The D-5 includes a rhythm module which can be played with the keyboard, but may be more effectively played by a sequencer or rhythm machine.

Drum modules usually use more voices than synthesizers at the same time. That means, 16 MIDI channels are not sufficient individual assignment of the drum voices. Because each drum voice does not require a sound range as wide as a synthesizer, it is wiser to assign each drum voice to a note number (key number).

Note numbers are numbers used for specifying pitches on a synthesizer. The C-1 to G9 keyboard is divided into 128 keys and note numbers are assigned to these keys, starting from the lowest. In this way, many numbers of rhythm voices can be used at the same time on one MIDI channel.

3. Main Contents of MIDI Information

MIDI information is divided into “Channel Messages” that have MIDI channels, and “System Messages” that control the entire system regardless of MIDI channels. Also, “Channel Messages” is divided into “Voice Messages” which are keyboard performance messages and “Mode Messages” that control the communication Modes.



a. Keyboard messages (Note messages)

Note messages are the most basic information that include which key (Note Number) was pressed (Note ON), how hard it (Velocity) was pressed, and when it was released (Note OFF).

A different rhythm voice is used for each Note Number in a rhythm module.

b. Tone selection (Program change messages)

A Program Change is used to cause the receiver unit to change its sound. On the D-5, it is used in the Performance mode or Multi Timbral mode to change Patches or Timbres. A Program Change number is set for each Patch/Timbre. A Program Change sent from an external device changes Patches/Timbres on the D-5, and also Changing Patches/Timbres on the D-5 causes the sounds on the external device.

The Program Change number assignment differs depending on the manufacturer or type of the instrument.

c. Control change messages

A Control Change can add subtle nuance to a performance, things like Modulation (i.e. vibrato and tremolo), Pitch Bender and Aftertouch. These messages are not used in all MIDI instruments. Study them using the MIDI implimentation chart of each instrument.

d. System exclusive

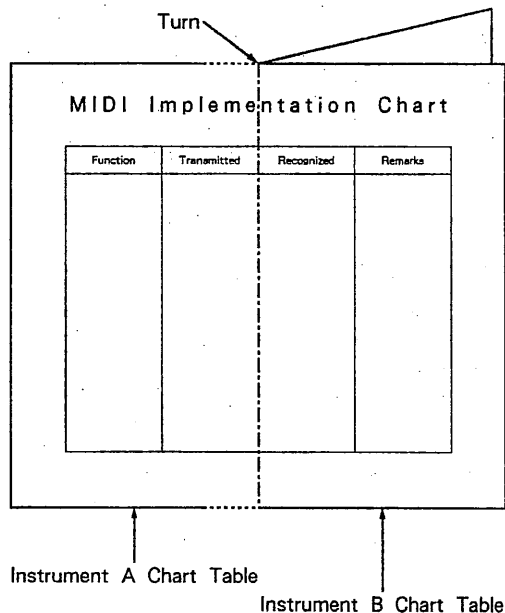
System Exclusive messages are messages that are exclusive to a particular manufacturer.

Each manufacturer has an "ID Number" which their instruments will recognize. Any system exclusive data received that has the wrong ID Number will be ignored by the unit receiving it. With Exclusive Messages, it is possible to transfer data between two units of the same model, or to save data into a sequencer (one that recognizes System Exclusive).

4. MIDI Implementation Chart

Refer to the D-5's MIDI implementation chart at the back of the EDIT volume. Although MIDI made it possible for a wide variety of instruments to communicate, this does not mean that all instruments will understand the entire MIDI language. So, in a multi-instrument MIDI system, you will need to check what information each instrument can send and receive. To allow quick check of this information, each instrument has a "MIDI Implementation Chart" in its owner's manual.

On the left hand side of the chart, various types of MIDI message names are listed. The transmit/receive column shows the capacity of the instrument to transmit or receive that data using "○" for yes and "×" for no. Those messages for which on both units "○" is indicated can be used. If its capability depends on other factors, the additional information will also be shown.



Contents of the Chart

●Basic Channel

This indicates how many MIDI channels can be set. If "memorized" is not written in the column, the unit is returned to the default channel once it is switched off.

●Mode

There are 3 items for Mode : Default, Messages, and Altered.

Default : This shows the mode selected when the unit is switched on.

Messages : This shows if it is possible for the instrument to receive Mode messages ; or after having received a mode message if it is possible to still change modes.

Altered : This column is only used for instruments that can receive messages which will switch the instrument to a special mode.

See page 48 "Mode" for detailed explanation about the Mode.

●Note Numbers

This row shows the note range over which the instrument can receive or transmit. Note number 60 corresponds to middle C (C4). The "True" column shows the actual sound range to be played.

●Velocity

There are [Note ON] and [Note OFF] rows for velocity. The columns shows whether the instrument can transmit or receive these two velocities. It represents just the speed of the respective note on or off. It does not represent the actual note on or off capability. If there is an "x" in either column, it does not mean that the instrument cannot recognize a note on or off.

●Aftertouch

This shows if the instrument can receive/transmit aftertouch information. The two rows refer to channel aftertouch (one value per MIDI channel) and polyphonic aftertouch (separate aftertouch for each key).

● **Pitch Bender**

This shows whether or not the instrument can receive/transmit pitch bender information.

● **Control Change**

This row shows whether or not the instrument can transmit/receive controls like modulation, hold or expression. It also shows what can be controlled by each Control number. These controls are particularly important when connecting two different instruments.

● **Program Change**

This row shows whether or not the instrument can transmit/receive program change information, and what number is used. Program change number assignments to sounds differ for each model.

● **Exclusive**

This row shows what the instrument can transmit/receive using the Exclusive messages.

● **Common**

This section is for sequencer based MIDI systems. It indicates if the instrument will understand MIDI Song Position Pointer, by which the instrument can determine from which bar to start playing ; and MIDI Song Selection, to decide which song to play, etc.

● **Real Time**

This row shows transmitting/receiving information for synchronizing to a sequencer or rhythm machine via MIDI. "Clock" and "Command" information is used for the instrument to understand when it should start/stop/continue, etc.

● **Aux Messages**

This row is used to display whether the instrument is capable of receiving information that will help it to avoid any MIDI problems.

2 EFFECTIVE USE OF THE MULTI TIMBRAL MODE

This section explains how to use external MIDI devices effectively in the Multi Timbral Mode. It will help you understand what you can achieve using your MIDI devices.

1. What is the Multi Timbral Mode ?

In the Multi Timbral mode, you can connect the D-5 with a sequencer and enjoy ensemble type performances.

a. Use of the Multi Timbral function

The Multi Timbral function turns the D-5 into eight individual synthesizer modules and a rhythm module, and includes a mixer and keyboard.

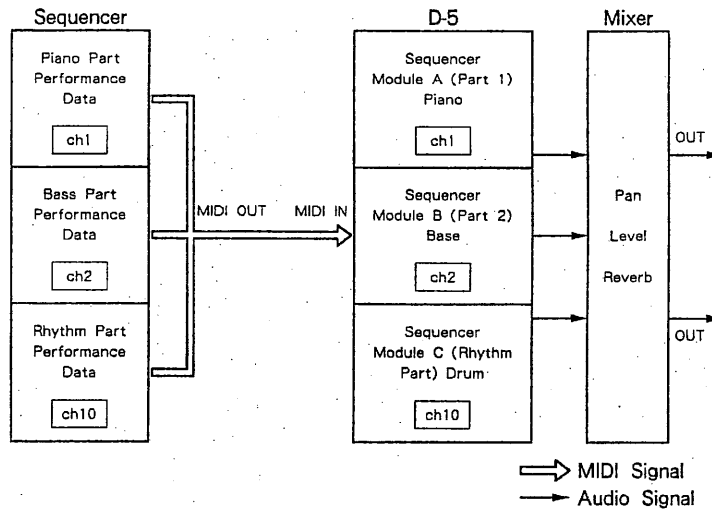
Usually, an ensemble performance is created by playing several parts simultaneously with different musical instruments, such as bass, guitar, piano, drums and so on. The D-5's Multi Timbral mode allows you to assign desired instrument voices to the eight synthesizer modules. The assigned instrument voices can be played by sending necessary performance information using a MIDI sequencer.

For example, to control three synthesizer modules ; A (piano), B (bass), and C (drum) with a MIDI sequencer, do as follows.

Set the MIDI channel, instrument voice, sound range (Key Shift) and bender range, etc. for each synthesizer module. Then set the level and panning, and effects such as reverb if necessary.

Record performance data in the MIDI sequencer beforehand respective to each MIDI channel. Then, playing the sequencer will send performance data over the individual MIDI channels, making the corresponding modules (piano, bass and drum) play at the same time.

1. What is the Multi Timbral Mode?



Each synthesizer module is called a Part, and the instrument voice used in each Part is called Timbre in the D-5. You can set MIDI channel, pan and level (like mixer's) for each Part. A Timbre is made of a Tone (basic sound) and parameters that determine how to play the Tone.

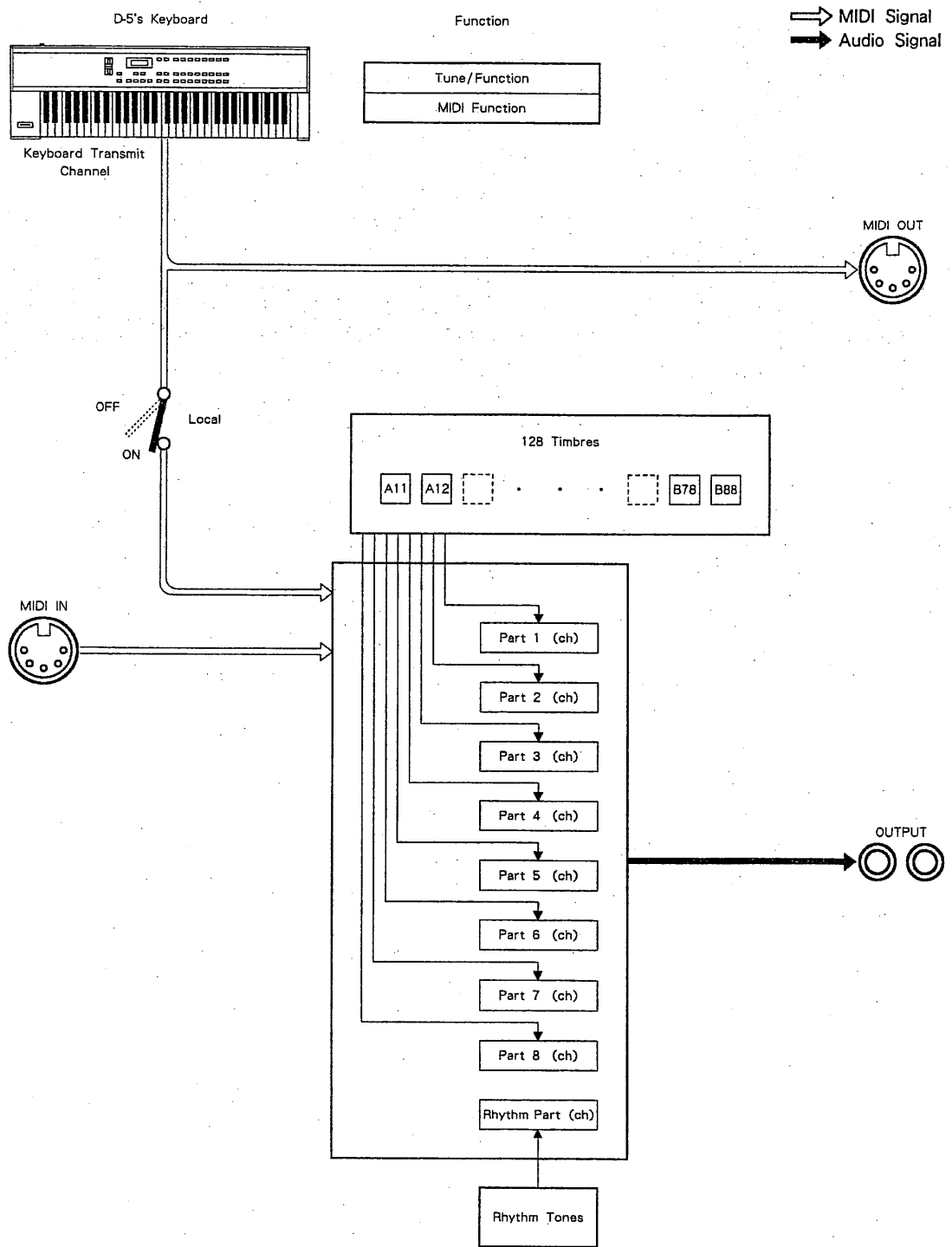
In the above example, the D-5 is played using only a MIDI sequencer, but it is also possible to play the keyboard along with the sequencer's performance by using another Part.

b. Flow of the MIDI messages

Each Part of the D-5 works just like a synthesizer module, and the keyboard section can be considered as an independent controller.

In the Multi Timbral mode, the D-5 is divided into eight Synthesizer Parts, a Rhythm Part and Keyboard Controller blocks. These blocks can be considered as connected via MIDI.

1. What is the Multi Timbral Mode?



● **Parts 1—8**

MIDI channel, pan and level can be set for each Part. Any one of the 128 Timbres can be assigned to each Part. Only one Timbre can be assigned to a Part, but the Timbre in each Part can be changed to another freely. Each Part can be played by Note On messages ; or controlled by Program Change, and Control Change messages, etc sent from the D-5's internal keyboard or through MIDI IN. More than one Part can be used at the same time by sending messages simultaneously to the individual MIDI receive channels of the Parts you wish to use.

● **Rhythm Part**

A MIDI receive channel can be set to the Rhythm Part as well. Also, selection can be made of Tones to be assigned to the Rhythm Part, and settings such as pan and level can be made for each such Rhythm Tone. Up to 85 Rhythm Tones can be assigned to Note Numbers, therefore, a great variety of Rhythm Tones can be played by using Note Numbers.

● **Controlling the Keyboard and Bender, etc.**

The keyboard can be considered as an independent MIDI controller. The keyboard has a transmit channel on which it sends performance data and Control Change messages such as Bender.

If the receive channel of any Part is set to the same number as the keyboard's transmit channel, the keyboard's performance data will be sent to that Part and play it. The keyboard's performance data is also output from MIDI OUT.

When Local Off is selected, the keyboard is disconnected from the internal synthesizer modules. Therefore, the keyboard cannot play the internal modules, but can play an external sound module connected to MIDI OUT.

● MIDI IN

Performance data fed into the D-5 through the MIDI IN will play the relevant Part. If using a device that can simultaneously transmit more than one MIDI channel message, such as a sequencer, several Parts can be played at the same time.

● MIDI OUT

The Keyboard's performance data is output on the set transmit channel through MIDI OUT. If a MIDI sound module is connected to the MIDI OUT, it can be played from the keyboard.

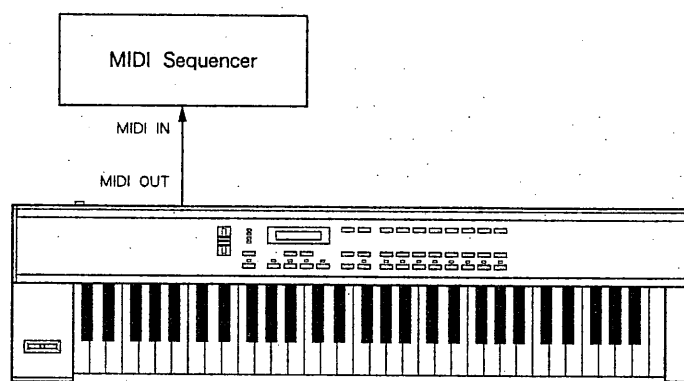
2. Example Setups in the Multi Timbral Mode

The following are some examples for experimenting with the Multi Timbral function.

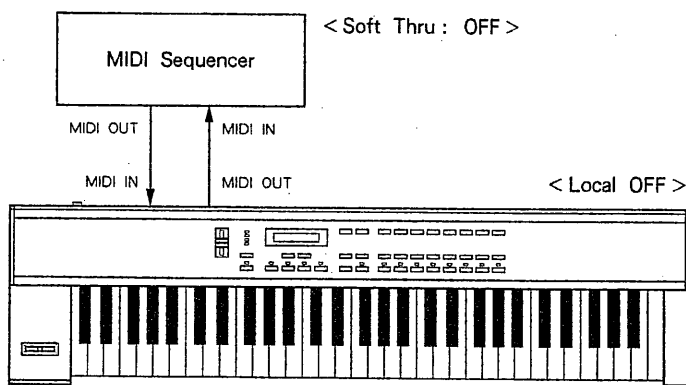
a. Setup with a MIDI sequencer

● Recording into a MIDI sequencer

To record a performance on the D-5's keyboard into a MIDI sequencer, set up the units as follows. Set the transmit channel of the keyboard to the same number as the receive channel of the Part you wish to record, then play the keyboard. To continue, and record another Part, repeat the same procedure.

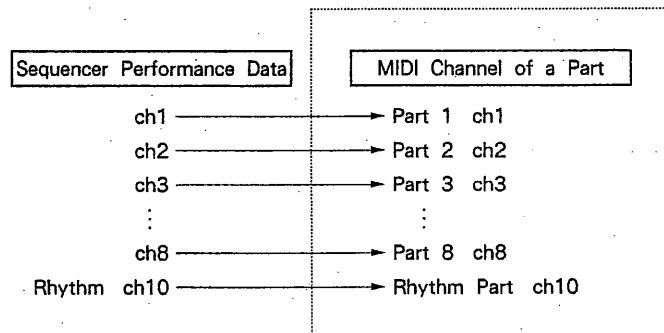
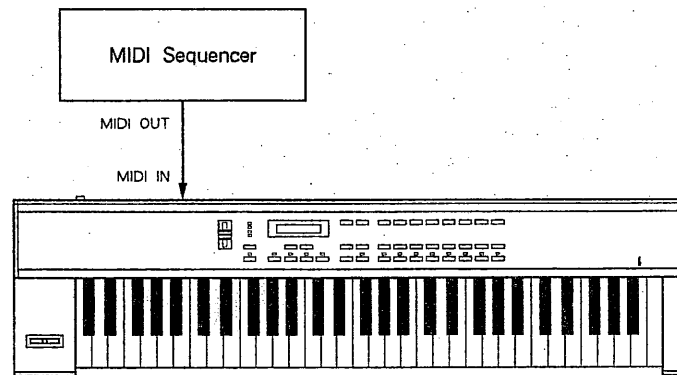


To connect the MIDI IN on one unit to the MIDI OUT on the other unit, set the Soft Thru on the MIDI sequencer to OFF, or set the D-5 to Local Off.



● **Playing the D-5 using only a MIDI sequencer**

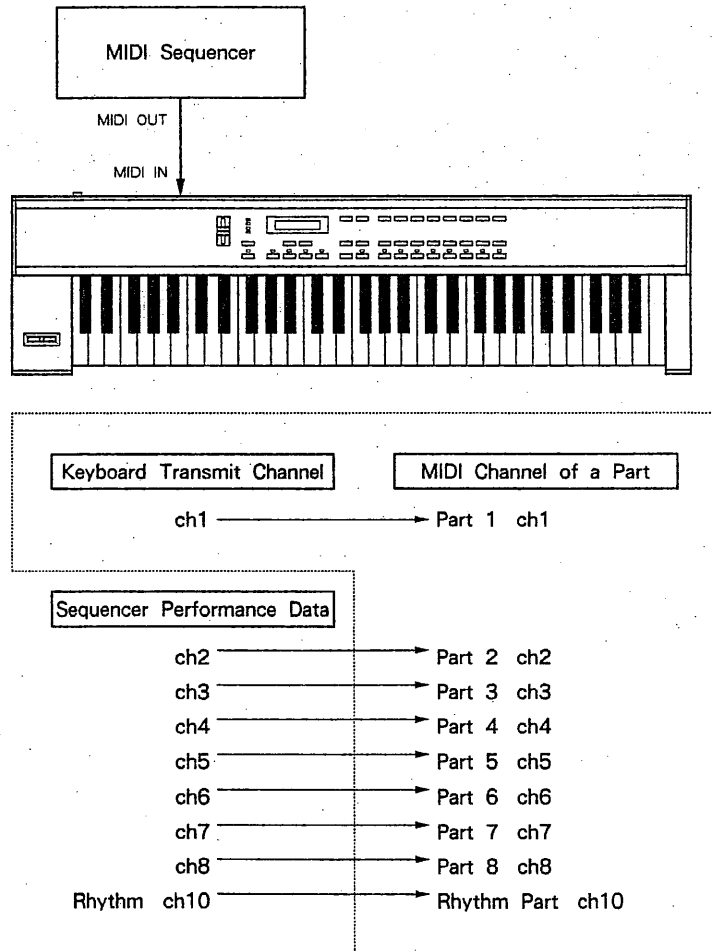
Record performance data of the MIDI channel that is assigned to each Part you wish to play into the sequencer. Set up the sequencer as shown below. Then start playing the sequencer, and each Part is played by the performance data of the relevant MIDI channel.



To play the Rhythm Part with the sequencer, you must set the Note number assignment to Rhythm Tones. If you have recorded the D-5's rhythm data into the sequencer, you do not need to rearrange the assignment. However, if you have used another rhythm unit, the rhythm assignment may differ from the D-5's, therefore, the recorded performance data may not play properly on the D-5. To change the rhythm assignment of the D-5, read page 114 "Rhythm Setup".

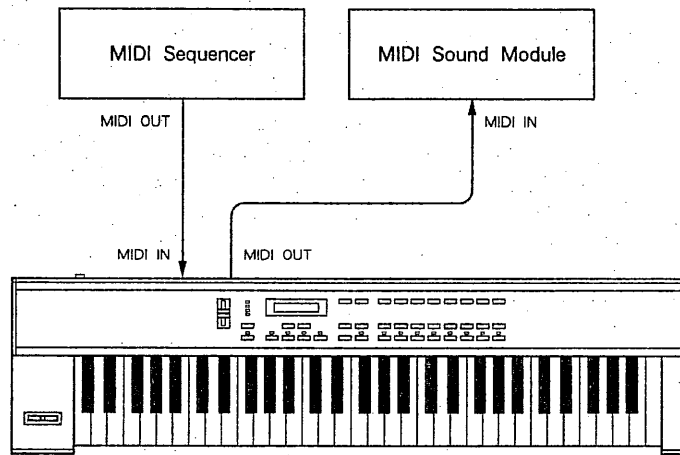
● **Playing the keyboard along with performance on a MIDI sequencer**

Set the receive channels of all the Parts other than the one to be played by the sequencer to the same number as the keyboard's transmit channel. In this way, the Parts played by the keyboard will sound without being affected by the Parts used for the MIDI sequencer.



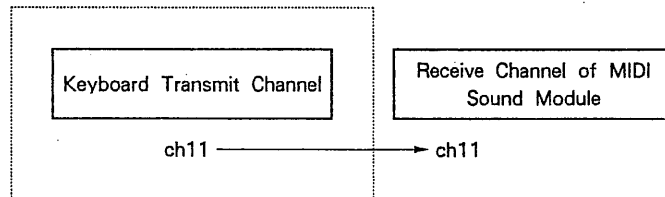
b. Setup with a MIDI sequencer and MIDI sound module

To play the D-5' synthesizer modules with a MIDI sequencer and play an external sound module with the D-5's keyboard, set up the units as follows.



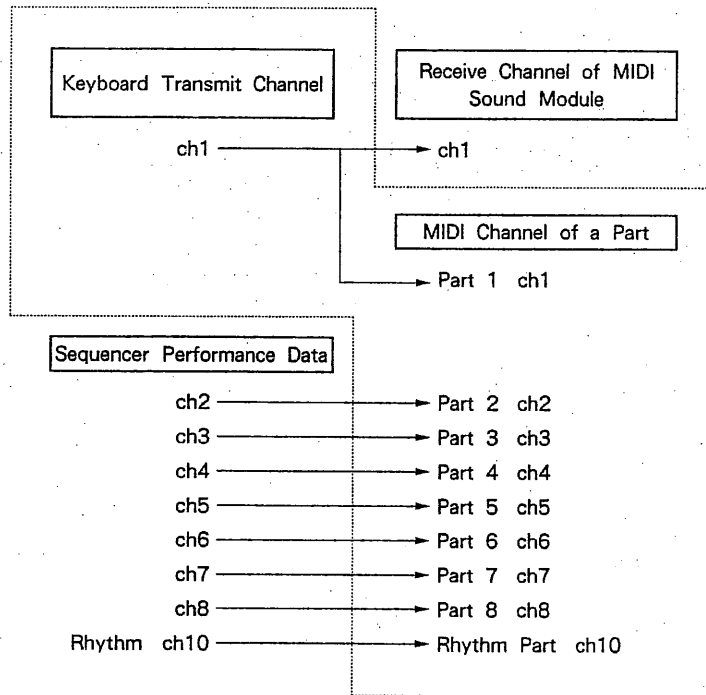
● **Playing only the external sound module with the keyboard**

To play only an external sound module with the keyboard, set the transmit channel of the keyboard to any number other than those of MIDI channels assigned to the Parts, then set the receive channel of the external sound module to the same number as the transmit channel of the keyboard. If the D-5 is set to Local Off, you do not need to set the transmit channel of the keyboard to a number other than the MIDI receive channels of the Parts.



● **Playing a Part and an external sound module in unison with the keyboard**

To play a Part and an external sound module in unison with the keyboard, match the keyboard's transmit channel to the receive channel of a Part not used by the sequencer, then similarly match to the receive channel of the external sound module.



3. Preliminary Settings

The following explains preliminary settings needed before actually using the Multi Timbral mode. For setting MIDI Functions and Tune/Function parameters, read the separate volume EDIT.

a. MIDI settings

This section explains the basic MIDI settings necessary for using MIDI devices. For setting the other MIDI functions, read page 16 in the separate volume EDIT.

● Receive Channel of each Part (1—16)

Set the receive channel of each Part. Normally, set a different channel for each Part.

MIDI Part1 CH

01

* If the channel of the Rhythm Part is changed, the rhythm channel (page 80) in the Performance mode is also changed.

● Keyboard's Transmit Channel (1—16)

Set the transmit channel of the keyboard to the same number as the receive channel of the Part (or the external MIDI sound module) which you wish to play with the keyboard.

MIDI Keyboard CH

01

● Local Control (ON/OFF)

To play only an external sound module with the keyboard regardless of the receive channels of the Parts on the D-5, set the Local Control to OFF. To mutually connect MIDI IN with MIDI OUT on both the D-5 and a sequencer, set the D-5 to Local OFF, or set the Soft Thru on the sequencer to OFF.

MIDI Local

OFF

3. Preliminary Settings

* The Local Control is default to ON whenever powered up.

* If the Local Control is changed here, the Local Control in the Performance mode (page 80) is also changed.

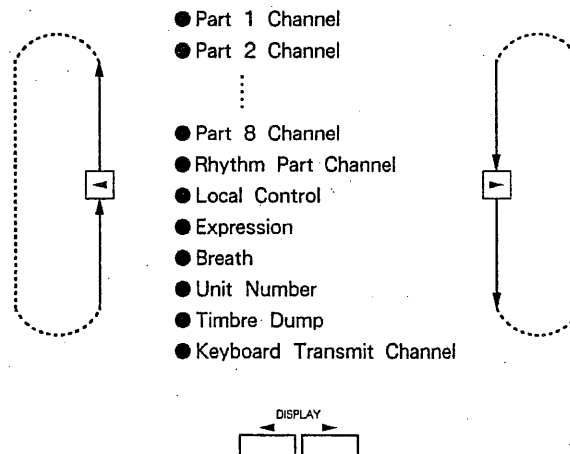
[PROCEDURE]

Before following the procedure, make sure that the D-5 is set to the Multi Timbral mode (the indicator of the **MULTI TIMBRAL** is lit).

- 1 Press **MIDI** to turn to the MIDI setting mode.
Pressing **MIDI** will set it to the Part 1's receive channel setting display.

```
MIDI Part1 CH
  01
```

- 2 To call the display of a different MIDI function, press **◀ DISPLAY ▶**.



- 3 Change values by using **◀ VALUE ▶**.
- 4 To continue, and edit other MIDI functions, repeat steps 2 and 3.
- 5 When finished, press **EXIT** to return to the previous display.

b. Other settings

This section explains how to set Pan/Level/Partial Reserve for each Part. These settings are changed as necessary. Additional functions are explained on page 12 in the separate volume EDIT.

* In the Rhythm Part, the value of Pan can be set individually for each rhythm sound, but cannot be set for the entire Rhythm Part. The overall level of the Rhythm Part can be set here. To set the level or pan separately for each rhythm sound, follow the explanation on page 114 "Rhythm Setup".

● **Setting Pan and Level** By setting the pan and level of each Part (1—8), the output balance of each Part can be controlled.

Pan (panpot) determines the positioning of the sound image in the stereo output. It can be set from 7 > to < 7 in 15 different levels. At >7, the sound image is set to the left position, at ><, to the center and at <7, to the right. Level can be set from 0 to 100, higher values increasing the level.

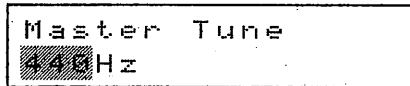
* When a certain Structure is selected, the relation of the Pan values and the actual sound images created differs. (Page 123)

* When the Tone is made of only one Partial, Pan actually changes at 8 levels.

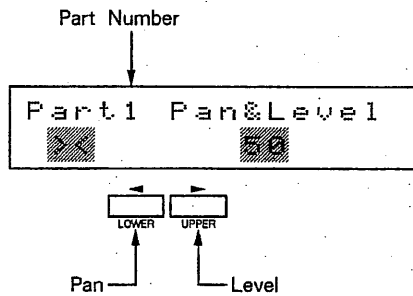
[PROCEDURE]

Before following the procedure, make sure that the D-5 is set to the Multi Timbral mode (the indicator of the **MULTI TIMBRAL** is lit).

- 1 Press **TUNE/FUNCTION**.
Pressing **TUNE/FUNCTION** will call the Master Tuning display.



- 2 Press **◀DISPLAY▶** to change to the Part display of Pan/Level.



- 3 Change values by using **◀VALUE▶**.
To edit the Level value, press **UPPER/▶** and to edit the Pan value, press **◀/LOWER**. The value of the blinking parameter can be edited.

- 4 To continue, and edit the other Parts, repeat steps 2 and 3.

- 5 When finished, press **EXIT** to return to the previous display.

● **Setting Partial Reserve** The maximum number of voices that can be simultaneously played on the D-5 is 32. When the D-5 receives an excess of Key On messages, certain currently playing sounds may be cut when needed most. To resolve this, you can use the Partial Reserve function that allows you to secure a certain number of Partials reserved for each Part, without the total number of Partials exceeding 32.

The D-5 is 32 voice polyphonic, but it actually produces 32 voices using 32 Partials. A Partial is the smallest unit of a sound within the D-5. The actual number of voices varies depending how many Partials are used for a Tone. For instance, a Tone made of only one Partial can be played using 32 voices, but a Tone using four Partials requires four Partials and therefore can play 8 voices at the same time. If you use nine of such Tones, there will be Parts which cannot use any Partial. Also, a Tone with a long decay may be overlapped with the next Tone, increasing the number of voices.

You can avoid such inconvenience by selecting a Tone made of a small number of voices, or change the arrangement of the song. However, Partial Reserve may be useful when the voice overflow is expected to be minimal.

The Partial Reserve allows you to set the number of Partials used for each Part.

For example :

- You could secure four Partials for a Bass to avoid losing the release, though it is played in single notes.
- You could secure only two Partials for a Sax, as it is played in single notes and does not need release.
- You could secure eight Partials for a Piano, as you may want at least four note chords.

3. Preliminary Settings

[PROCEDURE]

Before following the procedure, make sure that the D-5 is set to the Multi Timbral mode (the indicator of the **MULTI TIMBRAL** is lit).

*The Partial Reserve can be set from 0 to 32 without the total number of Partials in 9 Parts exceeding 32. If you cannot increase the value, check the values set in the other Parts, then try setting again.

- 1 Press **TUNE/FUNCTION**.
Pressing **TUNE/FUNCTION** will call the Master Tuning display.

```
Master Tune
440Hz
```

- 2 Press **◀DISPLAY▶** to change to the Part display for Partial Reserve.

```
Part1 Reserve
01
```

- 3 Change values by using **◀VALUE▶**.

- 4 To continue, and set the Partial Reserve for other Parts, repeat steps 2 and 3.

- 5 When finished, press **EXIT** to return to the previous display.

4. Timbre Selection

Timbres can be changed by using the panel buttons on the D-5 or by sending Program Change from an external device.

a. Timbre selection by panel operation

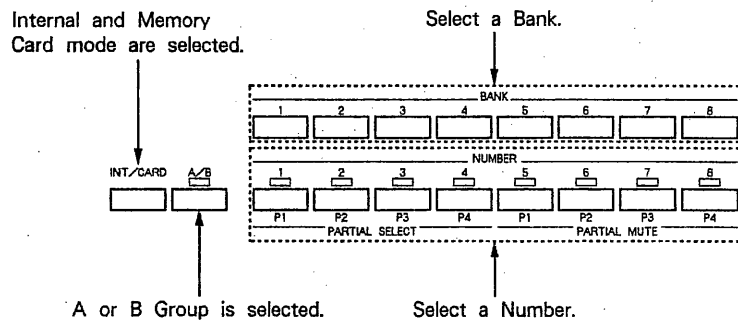
Timbres can be changed by using the panel buttons on the D-5.

● Changing Timbres using the Keyboard Display

When you wish to send Program Change messages to an external device, such as to record the D-5's keyboard performance into a MIDI sequencer or to play an external sound module with the D-5, change Timbres in the keyboard display.

1 Change to the keyboard display by pressing **◀/LOWER** or **UPPER/▶**.

2 Using the following buttons, change Timbres.
To change Timbres, you must specify the **NUMBER** last. If you specify only the **NUMBER**, the corresponding Timbre in the same Bank will be selected.



Timbre Numbers correspond to Program Change Numbers as follows.

4. Timbre Selection

		Number							
		1	2	3	4	5	6	7	8
A Group	Bank								
	1	1	2	3	4	5	6	7	8
	2	9	10	11	12	13	14	15	16
	3	17	18	19	20	21	22	23	24
	4	25	26	27	28	29	30	31	32
	5	33	34	35	36	37	38	39	40
	6	41	42	43	44	45	46	47	48
	7	49	50	51	52	53	54	55	56
B Group	1	57	58	59	60	61	62	63	64
	2	65	66	67	68	69	70	71	72
	3	73	74	75	76	77	78	79	80
	4	81	82	83	84	85	86	87	88
	5	89	90	91	92	93	94	95	96
	6	97	98	99	100	101	102	103	104
	7	105	106	107	108	109	110	111	112
	8	113	114	115	116	117	118	119	120
	121	122	123	124	125	126	127	128	

* The same Program Change Numbers are used commonly for the Internal and Card memories.

● Changing Timbres using the Part display

When you plan on recording sound data into a sequencer later, you may wish to compare Timbres, or change the Timbres of a Part temporarily. If so, change Timbres in the Part display.

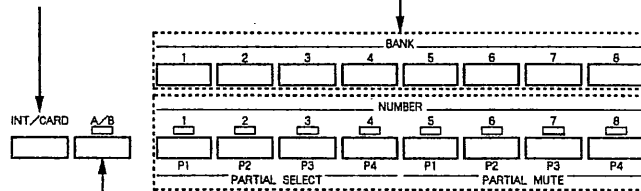
1 Call the display of the Part whose Timbres you wish to change by pressing **◀DISPLAY▶**.

2 Using the following buttons, change Timbres.

To change Timbres, you must specify the **NUMBER** last. If you specify only the **NUMBER**, the corresponding Timbre in the same Bank will be selected.

Internal and Memory Card mode are selected.

Select a Bank.



A or B Group is selected.

Select a Number.

b. Timbre selection from an external MIDI device

Timbres on the D-5 can be changed by Program Change messages sent from an external MIDI device.

If you wish to change Timbres on the D-5 from an external MIDI sequencer or MIDI sound module, send Program Change messages to the D-5.

If Program Change messages have been recorded in a sequencer together with performance data, they will change Timbres in each Part while playing. If you have recorded Program Change messages for the Part to be played by the keyboard, its corresponding Timbres also will be changed.

Program Change numbers correspond to the Timbres differently depending on the MIDI device used. Make confirmation first.

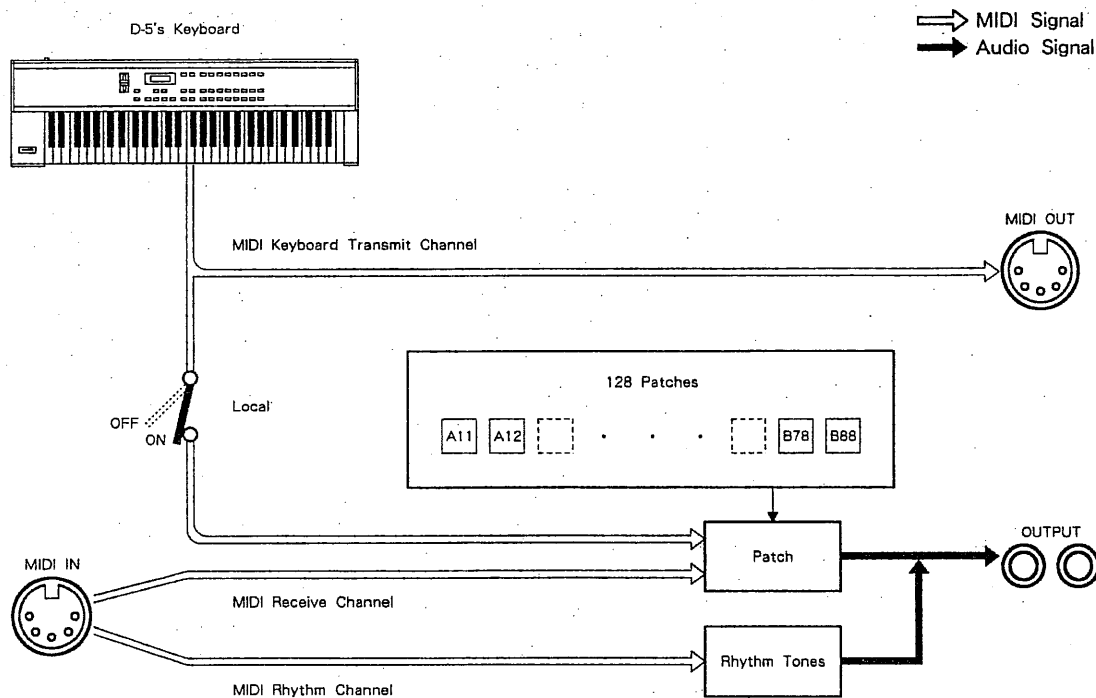
* The same Program Change numbers are used for both Internal and Card memories, therefore, the Internal and Card memory modes cannot be switched by using Program Change messages sent from an external device.

3 EFFECTIVE USE OF THE PERFORMANCE MODE

This section explains how to use MIDI devices in the Performance Mode. It will help you understand what you can achieve using your MIDI devices.

1. Flow of MIDI Messages

In the Performance Mode, the D-5 is divided into three sections, synthesizer modules, a rhythm module and a keyboard controller. These blocks may be considered to be connected via MIDI.



○The D-5's keyboard performance or Control messages such as Bender will not only control the internal synthesizer modules but also an external MIDI sound module connected to MIDI OUT, since these messages are output through MIDI OUT.

In the Performance mode, as opposed to the Multi Timbral Mode, the internal sound modules are connected to the keyboard, and therefore will be always played by the keyboard no matter what MIDI channels, receive and transmit, they are set to. However, if you wish to play only an external sound module with the D-5, you can turn the Local Control to OFF to disconnect the internal sound modules.

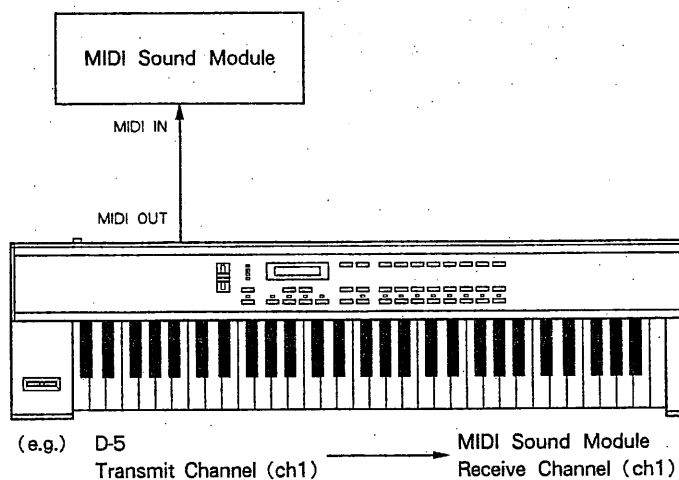
○Performance data fed in through MIDI IN will play the internal sound modules. Performance data received on a MIDI receive channel will control the synthesizer module, and performance data received on the MIDI rhythm channel will control the rhythm module.

2. Example Setups in the Performance Mode

The following are some examples illustrating usages in the Performance mode.

a. Setup with a MIDI sound module

The D-5 and a MIDI sound module can be played in unison with the D-5's internal keyboard.

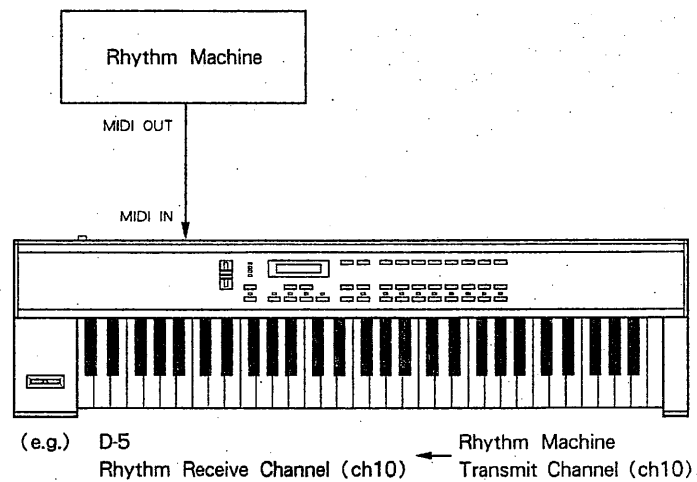


b. Using the D-5 as a MIDI sound module

The D-5's internal sound module can be played by performance data from an external MIDI device.

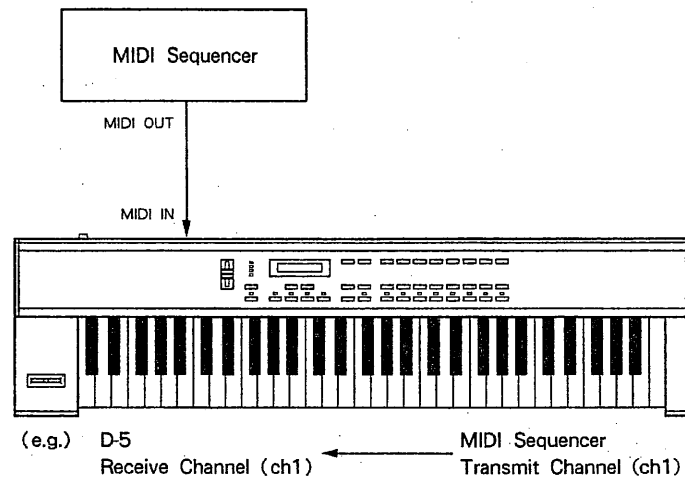
● Setup with a rhythm machine

The rhythm module of the D-5 can be played by performance data programmed on an external rhythm unit.



● Setup with a MIDI sequencer

The synthesizer module of the D-5 can be played by sequencer.



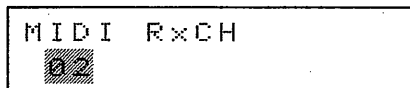
3. MIDI Settings

This section explains the basic MIDI settings necessary for using the D-5 in the Performance mode. For setting other MIDI functions, read page 16 "MIDI Functions" in the separate volume EDIT.

* The MIDI function you have edited will be retained even after the unit is switched off, except for a few cases.

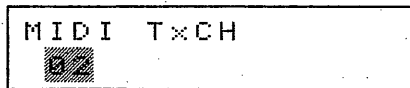
● Receive Channel (1— 16)

Set the receive channel for controlling the D-5 synthesizer module from an external MIDI device.



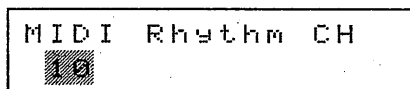
● Transmit Channel (1— 16)

Set the transmit channel for sending keyboard performance data to an external device.



● Rhythm Channel (1— 16)

Set the receive channel for controlling the rhythm module of the D-5 from an external device.

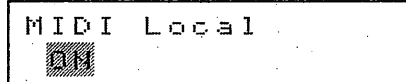


* Changing the rhythm channel here will also change the channel (page 67) of the Rhythm Part in the Multi Timbral mode.

● Local Control (ON/OFF)

This selects whether or not to disconnect the keyboard or performance controlling section on the panel from the synthesizer section.

When this is set to Off, performance data from the keyboard will be output through MIDI OUT, but the synthesizer modules will not be played by the keyboard. However, the synthesizer can be controlled with performance data sent through the MIDI IN.



- * The Local Control is default to ON when powered up.
- * If the Local Control is edited here, the Local Control in the Multi Timbral mode (page 67) is also changed.

● Program Change (ON/OFF)

To send or receive Program Change messages, set this to ON.

Patch Numbers correspond to Program Change Numbers as follows.

		Number							
		1	2	3	4	5	6	7	8
A Group	Bank								
	1	1	2	3	4	5	6	7	8
	2	9	10	11	12	13	14	15	16
	3	17	18	19	20	21	22	23	24
	4	25	26	27	28	29	30	31	32
	5	33	34	35	36	37	38	39	40
	6	41	42	43	44	45	46	47	48
	7	49	50	51	52	53	54	55	56
B Group	8	57	58	59	60	61	62	63	64
	1	65	66	67	68	69	70	71	72
	2	73	74	75	76	77	78	79	80
	3	81	82	83	84	85	86	87	88
	4	89	90	91	92	93	94	95	96
	5	97	98	99	100	101	102	103	104
	6	105	106	107	108	109	110	111	112
	7	113	114	115	116	117	118	119	120
8	121	122	123	124	125	126	127	128	

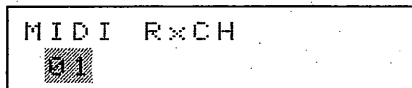
- * The same Program Change numbers are used for both Internal and Card memories, therefore, the Internal and Card memory modes cannot be switched by using Program Change messages sent from an external device.

3. MIDI Settings

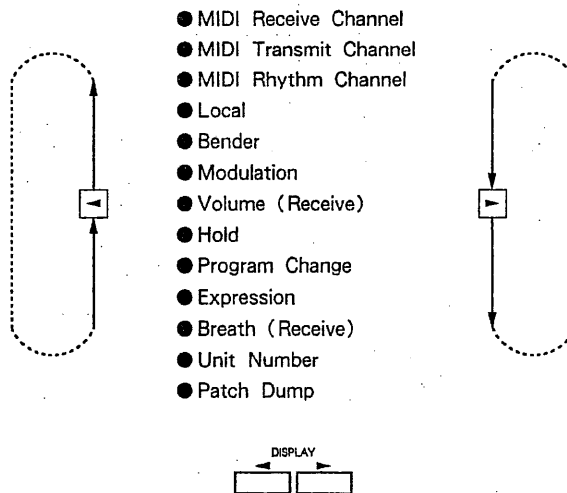
[PROCEDURE]

Before following the procedure, make sure that D-5 is set to the Performance mode (the indicator of the **PERFORMANCE** is lit).

- 1 Press **MIDI** to turn to the MIDI setting mode.
Pressing **MIDI** will set to the receive channel setting display.



- 2 To call the display of the MIDI function you wish to edit, press **◀DISPLAY▶**.



- 3 Change values by using **◀VALUE▶**.

- 4 To continue, and edit the other MIDI functions, repeat steps 2 and 3.

- 5 When finished, press **EXIT** to return to the previous display.

SECTION III

SOUND EDITING (BASIC EDITING)

What is Editing?.....	84	3 Rhythm Setup.....	114
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c.Writing procedure.....	99	a.The structure of a Tone.....	119
		2.Editing Procedure.....	126
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1.Relation Between Timbre and Tone.....	103	b. Simple editing.....	134
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What is Editing ?

A synthesizer features two major functions; one is playing, the other is synthesizing. Sound synthesis on a synthesizer involves various parameters. Modifying the values of parameters is Editing. Changing MIDI channels, pan and level settings is also editing.

To begin editing, you could select a Patch or Timbre which is already close to the image you seek, then edit a part of it. For instance, shifting the pitch of the sound just one octave above or below will considerably change the nuance of the sound. Many different Patches or Timbres can be created simply by using the Tones preprogrammed on the D-5.

When you wish to go further, you can create new Tones. There are many numbers of parameters comprising a Tone, so Tone editing is not an easy job. You should carefully study the parameters of existing Tones and understand the make-up of sound first.

You can edit as much as you like, without fear of losing previous sound data unless you perform the write procedure. So, you can experiment as many times as you like, and still return to the original sound.

1 EDITING IN THE PERFORMANCE MODE

In the Performance mode, Patches and Tones can be edited. This section explains Patch editing. Select a Patch that is close to your image, and edit a part of the data. For Tone editing, see page 119 "Tone Setting".

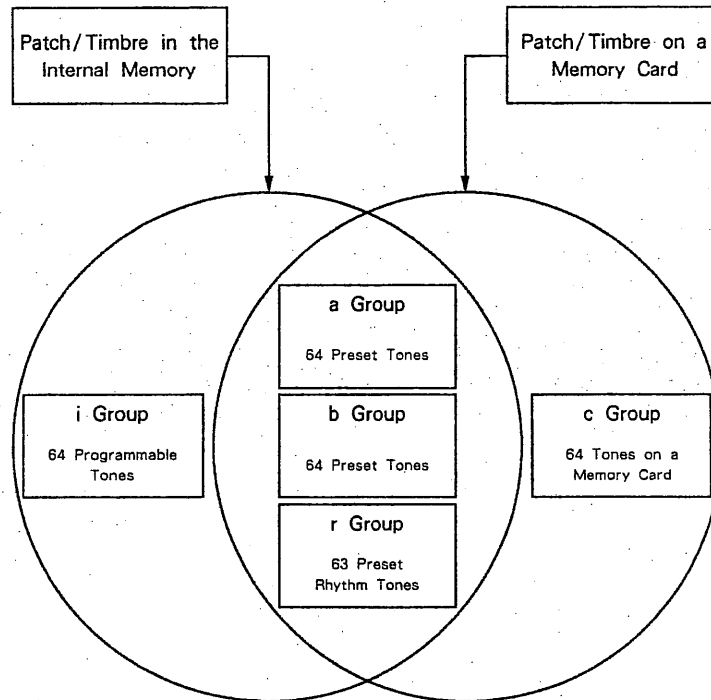
1. Relation Between Patch and Tone

A Tone is the basic unit of a sound. A Patch consists of a pair of Tones combined with various Patch parameters that determine how the Tones are to be played.

The Tones (Tone Numbers) assigned to each Patch are merely numbers, in other words, they do not include the Tone data contents. So, even when two different Patches use the same Tones, they will sound completely different if the Patch parameters are set differently. However, if the same Tone is used in more than one Patch, editing data for the Tone will affect all the Patches that use this Tone.

Tones are arranged in different Tone groups, a, b, r, i and c. Tones in a, b and r groups can be used for Patches both in the internal memory and on a memory card, but Tones in i group can be assigned only to Patches in the internal memory. Tones in the c group can be used only in the Patches on a memory card.

1. Relation Between Patch and Tone



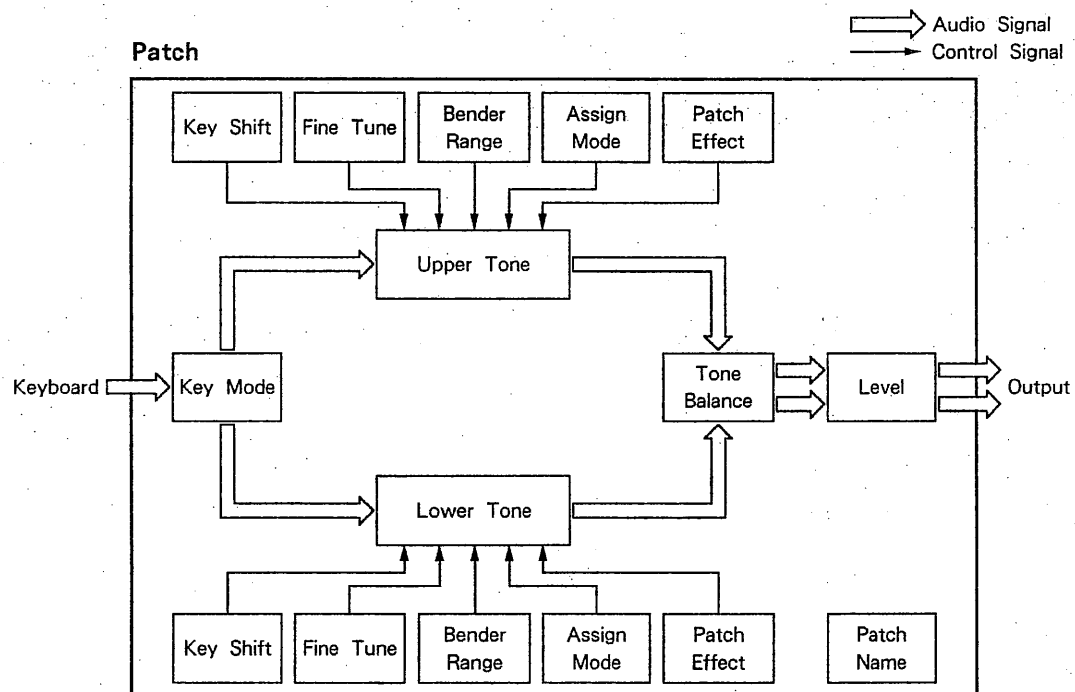
If you write a Patch in the internal memory onto a memory card, Tones in group i will be automatically replaced by Tones of group c. Consequently, the Patch will be changed.

To avoid this, write the relevant Tones in the internal memory onto a memory card first. The same thing applies when copying a Patch from a memory card to the internal memory.

2. Setting Patches

A Patch is accompanied with Patch parameters such as Tone assignment, Key Mode, etc.

The following outlines the structure of Patch parameters.



a. Functions of patch parameters

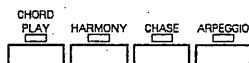
Patch parameters may be divided into five groups :

- Performance Controlling parameters
- Tone Selection parameters
- Pitch parameters
- Volume parameters
- Other parameters

■ **A Performance Controlling parameters**

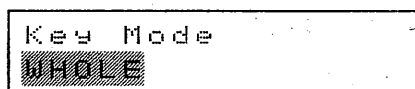
● **Patch Effect Select (OFF, Chord Play, Harmony, Chase, Arpeggio)**

This allows you to select which Patch Effect (Chord Play, Harmony, Chase or Arpeggio) should be turned on in each Patch. To select a Patch Effect to be used, use the relevant Effect button.



For detailed explanation of how each effect is used, see page 35 "Patch Effects".

● **Key Mode (WHOLE, DUAL, SPLIT)**



Two Tones, Upper and Lower Tones can be assigned to a Patch. Key Mode determines how these Tones should be output.

WHOLE :

Only the Upper Tone is played on the entire keyboard. This mode may be ideal for a piano type tone that requires many numbers of voices.

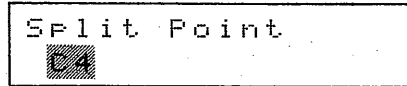
DUAL :

Both Upper and Lower Tones are played on the entire keyboard. This mode allows you to create fat sounds by slightly shifting the pitch of either tone ; or to play two tones in unison. It may also be interesting to mix a quick attack sound and slow attack sound. Ideal for strings or orchestra type tones.

SPLIT :

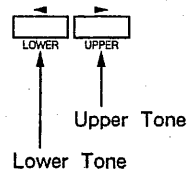
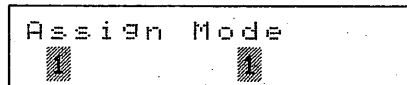
The keyboard is split into two sections at the Split Point. Upper Tone is played in the upper section of the keyboard and Lower Tone is played in the lower section. This mode, therefore, allows you to play the piano part with you right hand while playing the bass part with your left hand.

● Split Point (C2—C # 7)



This sets the key position where the keyboard is split into the upper and lower sections. It is also used to divide the keyboard for the Chord Play, Harmony or Arpeggio. When the Chord Play or Harmony function is being used, even if the Key Mode is set to other than the Split mode, the keyboard will be divided at the set Split Point.

● Assign Mode (1—4)



Assign Mode refers to how each Tone should be played by Key messages.

- 1 : Single Assign - Played with Last Note Priority
- 2 : Single Assign - Played with First Note Priority
- 3 : Multi Assign - Played with Last Note Priority
- 4 : Multi Assign - Played with First Note Priority

Single Assign :

When more than one Key On message is received by the same Key Number, the sound of that key is muted once, then played again.

Multi Assign :

When more than one Key ON message is received by the same Key Number on the same MIDI channel, the two sounds are mixed.

Last Note Priority :

When the D-5 has received more Key On message than the maximum voices, the earlier messages are replaced by the later ones.

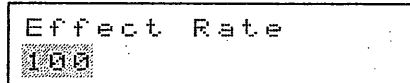
First Note Priority :

When the D-5 receives more Key On message than the maximum voices, the later messages are ignored, retaining the currently playing sounds.

Set the Assign Mode depending on the type of Tone or Partial :

Tone with long release :	3 or 4
Tone with short release :	1 or 2
Tone that uses many number or Partials :	1 or 3
Tone that uses a small number of Partials :	2 or 4

● **Effect Rate (0—100)**



This sets the rate of the Chase or Arpeggio effect. You may set it for matching the tempo to the song to be played.

● Arpeggio Mode (UP, DOWN, U & D, RND)

Arpeggio Mode

U & D

This selects one of the following Arpeggio Performance Patterns.

UP :

This plays the chord from the root note.

[Example : C chord]



DOWN :

This plays the chord from the highest note.

[Example : C chord]



U & D (Up & Down) :

This plays the chord from the root note to the highest note, then plays downward, in sequence.

[Example : C chord]



RND (Random) :

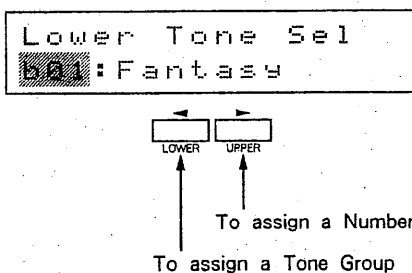
This plays the chord in random order.

[Example : C chord]



■ A Tone Selection parameters

- Lower Tone Select (a1—a64, b1—b64, i(c) 1—i(c) 64, r1—r63, OFF)

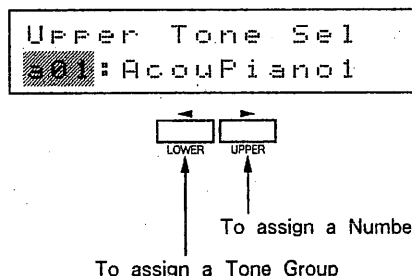


This selects the Tone assigned to the lower section of the keyboard. Tones are arranged in several Tone groups. The a, b, r, and i groups can be used or Internal Patches. The a, b, r, and c group can be used or the Patches on a memory card. At OFF, no sound is generated.

Tone Group	Internal		Memory Card	
	a, b, i	r	a, b, c	r
Number	1—64	1—63, OFF	1—64	1—63, OFF

- a : Preset Tone (Internal)
- b : Preset Tone (Internal)
- r : Preset Rhythm Tone (Internal)
- i : Programmable Tone (Internal)
- c : Tone on a memory card

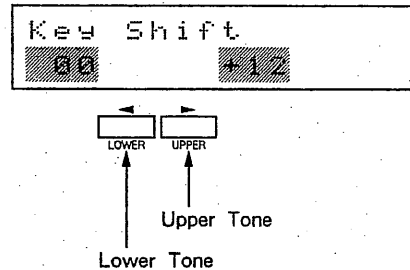
- Upper Tone Select (a1—a64, b1—b64, i(c) 1—i(c) 64, r1—r63, OFF)



This selects the Tone assigned to the upper section of the keyboard. Tones are arranged in several Tone groups. The a, b, r, and i groups can be used for Internal Patches. The a, b, r, and c group can be used for the Patches on a memory card. At OFF, no sound is generated.

■ Pitch Parameters

● Key Shift (-24—+24 in semitone steps)

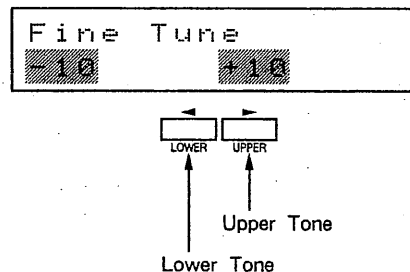


The Key Shift function shifts the pitch of each Tone in semitone steps. In the above example, only the Upper Tone is shifted one octave above (12 = 1 octave).

When using the Key Shift function in the Dual Key mode, select the same types of Tones for Upper and Lower, and shift the pitch one octave or a 5th, and a fat sound will be obtained. Strings or brass type Tones may be used to obtain more effective results with Key Shift.

In the Split Key mode, Key Shift may be used for matching the sound range of the Upper and Lower Tones.

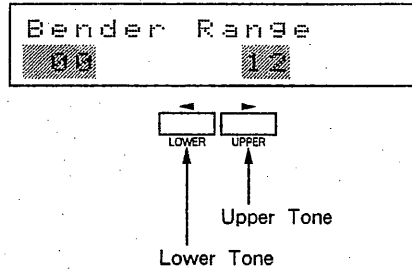
● Fine Tune (-50—+50 : approx. ± 50 cents)



Fine Tune performs subtle pitch adjustment for each Tone. In the Dual Key mode, select the same types of Tones for Upper and Lower and shift the pitch slightly, and a richer sound will be obtained. Strings or brass type Tones can be used to obtain the most effective results with Fine Tune.

* To tune the overall pitch of the D-5, use the Master Tune function (See page 40).

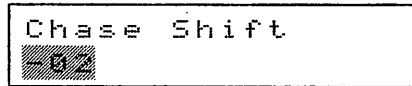
● **Bender Range (0—24 in semitone steps)**



When the pitch is controlled with the Bender Lever, this sets the variable range of the pitch change caused by moving the lever to the right or left extremes.

In the above example, when the Bender Lever is moved to the right (or left) extreme, the pitch of the Lower Tone remains intact, while the pitch of the Upper Tone is increased (or decreased) by one octave. If the value for the Upper Tone is set to 7, harmony of a 5th will be obtained. Higher values will create portamento-like effect.

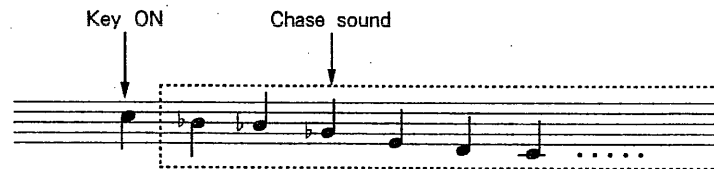
● **Chase Shift (-12—+12 in semitone steps)**



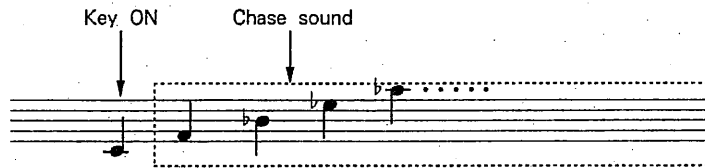
This sets how the pitch of the Chase sound (repeat) changes.

When it is set to "+" values, the pitch increases gradually, and when set to "-", it decreases. At zero, the pitch does not change.

-2 value



+ 5 value

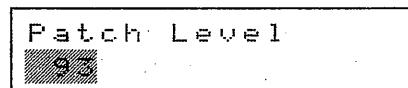


You may set it to chromatic (semitone) to create wind chime sounds, or set to a 3rd or 5th to create chord-like effects.

* Any note exceeding the sound range (C1—C9) cannot be played.

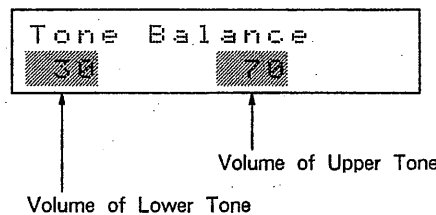
■ Volume Parameters

● Patch Level (0—100)



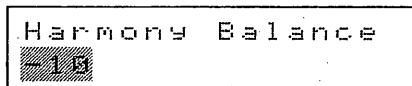
This adjusts the overall volume of a Patch. Using this parameter, you can adjust the volume balance of the Patches, so that the volume will not change erratically when Patches are changed.

● Tone Balance (0—100)



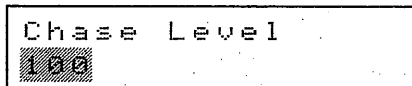
Adjust the volume balance of the Upper and Lower Tones. The total volume of the two Tones is always 100, and increasing the volume of either Tone will automatically decrease the other one.

● Harmony Balance (-12-0)



This adjusts the volume balance of the harmony and top note (the key pressed on the upper keyboard) when the Harmony effect is being used.

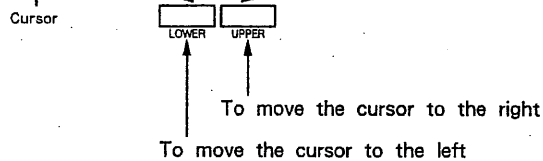
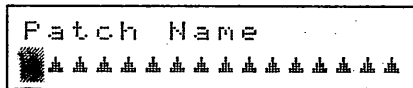
● Chase Level (0-100)



This sets the amount of decay in the Chase sound (repeat sound) when the Chase effect is being used. Lower values will make the Chase change more drastically, while higher values will make it change more slowly.

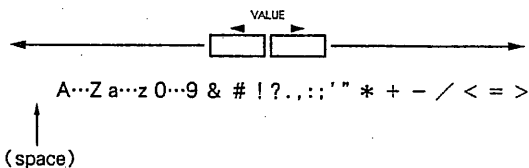
■ Other Parameters

● Patch Name



You can put a name to each Patch using up to 16 characters.

Move the cursor to the character to be changed with [LEFT/LOWER] [UPPER/RIGHT], then change the character with [LEFT/VALUE] [RIGHT]. Characters available for Patch Names are as follows :

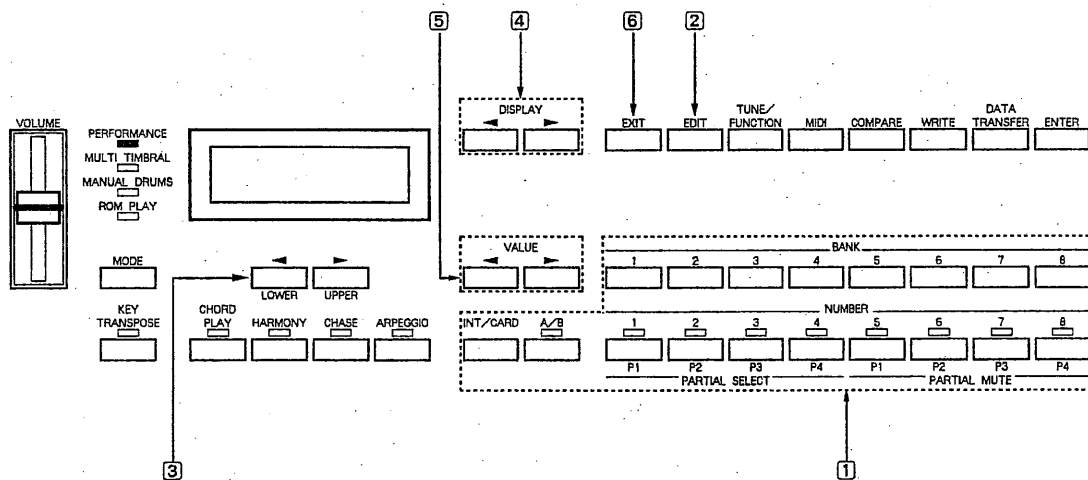


b. Editing procedure

This section explains the basic procedure for editing the Patch parameters described in the previous section.

* Edited data will be erased if you switch off the unit or return the unit to Play mode, then change Patches or operation modes. To retain the edited data, be sure to take an appropriate writing procedure (page 99).

Before going to the editing procedure, check if the unit is set to the Performance mode (the indicator of **PERFORMANCE** is lit).



1 Select the Patch to be edited.

2 Press **EDIT**.

```

Edit Select
Patch  Tone
    
```

3 Press **LOWER** to turn to "Patch".

```

Key Mode
EDIT
    
```

4 Select the parameter to be edited with **◀DISPLAY▶**.
Pressing **▶** will advance the display, while **◀** will move to the previous displays.

- Key Mode
- Split Point
- Lower Tone Select
- Upper Tone Select
- Key Shift
- Fine Tune
- Bender Range
- Assign Mode
- Effect Rate
- Harmony Balance
- Chase Shift
- Chase Level
- Arpeggio Mode
- Tone Balance
- Patch Level
- Patch Name

* A parameter with the ○ mark can be set separately for the Upper and Lower Tones. To edit the Upper Tone, press **UPPER/▶**, and to edit the Lower Tone, press **◀/LOWER**. The value of the pressed Tone will blink, showing that it can be edited.

5 Change the value using **◀VALUE▶**.
While the value is being edited, it keeps blinking.

* If you wish to hear the Patch before editing it, press **COMPARE** during editing. Pressing it again will return to the editing mode.

6 To continue, and set a different parameter, repeat steps **4** and **5**.

* To quit editing, press **EXIT**. The unit will return to Play mode.

7 To write the edited value into memory, take the following writing procedure.

c. Writing procedure

If you wish to retain the edited data for later use, write it into the internal memory or onto an optional memory card.

This section explains how to write into the internal memory. To write onto a memory card, read "Writing Data onto a memory card" on page 118 in the EDIT volume.

To write data into the internal memory, specify the destination Patch number where the edited data is to be written. It is wise to select the destination Patch so that you can easily arrange the Patches later. For instance, you could arrange the Patches in the same order as they will be played, or group together the same type of sounds. (By repeating the writing procedure, you can rearrange the order of Patches.)

Writing data to internal memory will automatically rewrite any previous Patch. To retain the existing data, save it on a memory card.

■ Memory Protect

The D-5 features the Memory Protect function that protects data in memory from accidental erasure. Memory Protect is default to ON. To write data into memory, turn the Memory Protect of the D-5 off.

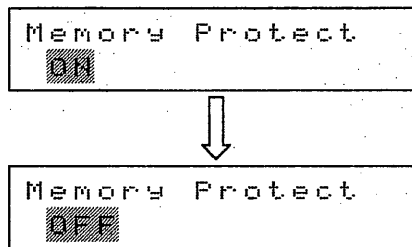
There are two different methods for turning Memory Protect off as follows.

● **Temporary Protect Off** Temporary Protect Off is used for turning the memory protect function off only during the actual write, then automatically returns Protect to On when finished. This type of Protect OFF will be sufficient if you need to turn off the memory protect just once, such as when writing edited data. How to set the Temporary Protect Off is explained on page 101 "Writing into the Internal Memory".

● **Normal Protect Off** The normal type Protect Off remains off until you change it, and may be more convenient when you need to write repeatedly.

To turn the Normal Protect off, do as follows.

- 1 Press **TUNE/FUNCTION**.
- 2 Press **◀DISPLAY▶** to call the Memory Protect display.
- 3 Set the Memory Protect to OFF using **◀VALUE▶**.



* Every time you finish writing, be sure to return Memory Protect to ON using the same procedure as above.

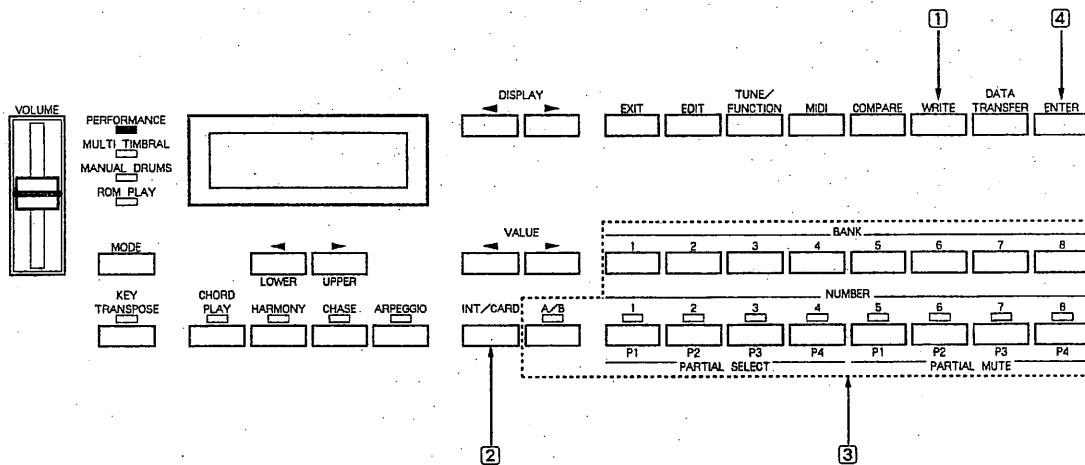
- 4 Press **EXIT** to return to the previous display.

* When the unit is switched off, the Memory Protect status is returned to ON.

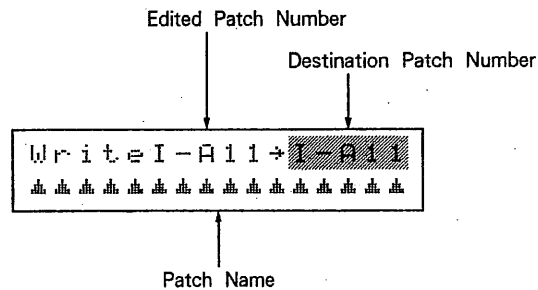
■ Writing data into the internal memory

To write a Patch into internal memory after editing is completed :

Enter the Patch writing mode from Patch editing (in any Patch parameter display), or while playing in the Performance mode.



- 1 Press **WRITE**.
The Writing display is called.



- 2 When you have been editing a Patch on a memory card, change from the Card (C) to Internal (I) by pressing **INT/CARD**.

* When writing a Patch on a memory card into the internal memory, even if Tones in c group have been used, they will automatically be replaced by i group Tones. (See page 85 "Relation between Patch and Tone") Therefore, if the contents of the Tones in the internal memory are different from the Tones on the memory card, the Tones will be changed. (See page 140 Tone of writing Procedure)

2 EDITING IN THE MULTI TIMBRAL MODE

In the Multi Timbral mode, Timbres and Tones can be edited. This section explains Timbre editing. Select a Timbre that is closest to the conception you have, and edit parts of the data. For Tone editing, see page 119 "Tone setting".

1. Relation Between Timbre and Tone

Both Timbres and Patches are composed of certain Tone numbers, and data determining how they function in performance. One main difference is that while 2 Tones are set for a Patch, only 1 makes up a Timbre. For that reason the parameters for a Patch are somewhat different than those for a Timbre.

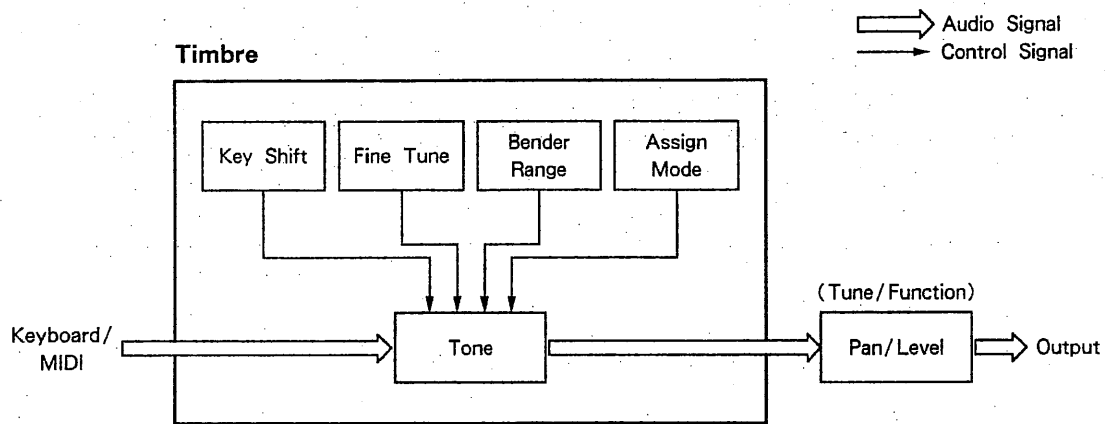
Tones, though, can be used commonly for both Timbres and Patches. Be aware though that if you edit the Tone used in a Timbre, any Patch that uses the same Tone will also sound different. (The reverse is also true.)

Tones are classified by several Tone groups, a, b, r, i, and c. (Refer to page 85 "Relation between Patch and Tones".) Tones in the a, b, and r groups can be used for Timbres both in the internal memory and on a memory card, but Tones in group i can be assigned only to Timbres in the internal memory, and Tones in group c can be used only in the Timbres on a memory card. If you write a Timbre in the internal memory onto a memory card, and its Tone is of group i, the Tone will be automatically replaced by a Tone of group c. Consequently, the Timbre will be changed. To avoid this, write the relevant Tone in the internal memory onto a memory card first. The same thing is applicable when copying a Timbre from a memory card to the internal memory.

2. Timbre Settings

A Timbre is accompanied by Timbre parameters such as Tone assignment, Key Shift, etc.

Timbre parameters looked at by function :



a. Functions of Timbre parameters

Timbre parameters may be divided into four groups :

- Performance Controlling parameters
- Tone Selection parameters
- Pitch parameters
- Other parameters

■ Performance Controlling Parameters

● Assign Mode (1—4)

Assign Mode

1

Assign Mode refers to how each Tone should be played by Key messages.

- 1 : Single Assign - Played with Last Note Priority
- 2 : Single Assign - Played with First Note Priority
- 3 : Multi Assign - Played with Last Note Priority
- 4 : Multi Assign - Played with First Note Priority

Single Assign :

When more than one Key On message is received by the same Key Number, the sound of that key is muted once, then played again.

Multi Assign :

When more than one Key On message is received by the same Key Number, two sounds are mixed.

Last Note Priority :

When the D-5 has received more Key On messages than the maximum voices, the earlier messages are replaced by the later ones.

First Note Priority :

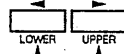
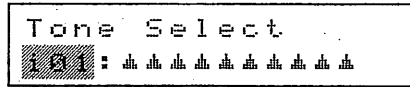
When the D-5 has received more Key On messages than the maximum voices, the later messages are ignored, retaining the currently playing sound.

Set the Assign Mode depending on the type of Tone or Partial :

- Tone with long reverberation : 3 or 4
- Tone with short reverberation : 1 or 2
- Tone that uses many numbers of Partials : 1 or 3
- Tone that uses a small number of Partials : 2 or 4

■ A Tone Selection Parameters

● Tone Select (a1—a64, b1—b64, i(c) 1—i(c) 64, r1—r63, OFF)



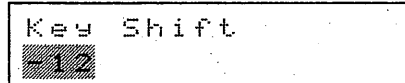
Push this to assign a Tone Number

Push this to assign a Tone Group

This selects a Tone assigned to the Timbre. Tones are arranged in several Tone groups. The a, b, r, and i groups can be used for Internal Timbres. The a, b, r, and c group can be used for the Timbres on a memory card. At OFF, no sound is generated.

Tone Group	Internal		Memory Card	
	a, b, i	r	a, b, c	r
Number	1—64	1—63, OFF	1—64	1—63, OFF

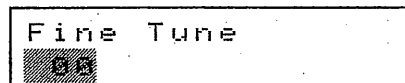
- a : Preset Tone (Internal)
- b : Preset Tone (Internal)
- r : Preset Rhythm Tone (Internal)
- i : Programmable Tone (Internal)
- c : Tone on a memory card

■ Pitch Parameters**● Key Shift (-24—+24)**

Key Shift
-12

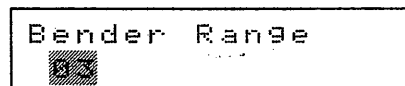
The Key Shift function shifts the pitch of a Tone in semitone steps. In the above example, Tone is shifted one octave lower (12 = 1 octave).

Key Shift allows you to play a Tone without shifting the key, using the same score, even when the key of an instrument is different. For instance, a score for the trumpet is written in the key of B \flat . If you set the Key Shift of the trumpet to -2, you do not need to transpose to play it as written.

● Fine Tune (-50—+50 : Approx. \pm 50 cents)

Fine Tune
00

Fine Tune performs subtle pitch adjustment for each Tone, and may be effectively used for matching pitch of Timbres used in ensemble performance. Also, by shifting the pitch slightly, rich sounds can be obtained.

● Bender Range (0—24 : semitone steps)

Bender Range
03

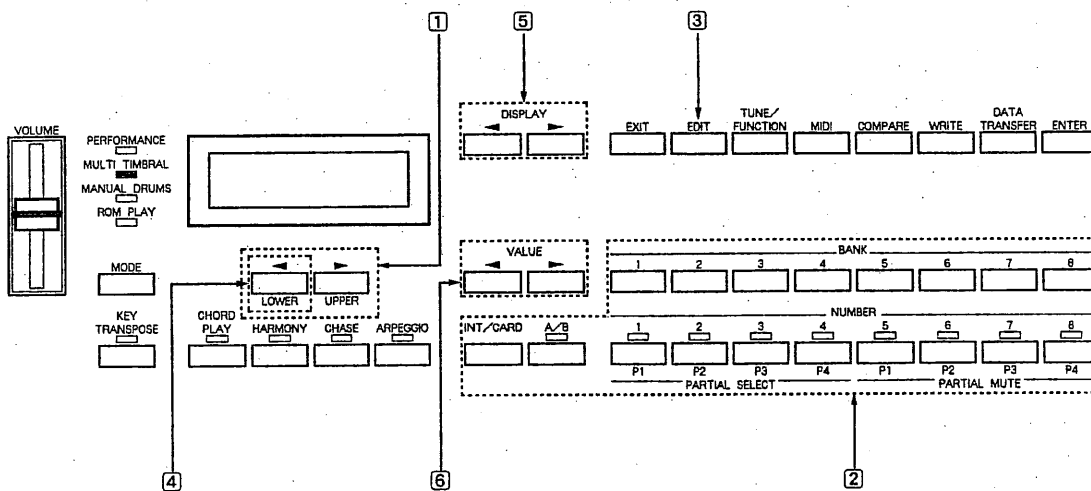
When the pitch is controlled with the Bender Lever, this sets the variable range of the pitch change caused by moving the lever to the right or left extremes.

b. Editing procedure

This section explains the basic procedure for editing the Timbre parameters described in the previous section.

* Edited data will be erased if you switch off the unit or return the unit to Play mode then change Timbres or select a different operation mode. To retain the edited data, be sure to take an appropriate writing procedure (page 110).

Before starting the editing procedure, check if the unit is set to the Multi Timbral mode (the indicator of **MULTI TIMBRAL** is lit).



1 Call the Keyboard display.
If you do not select a part which can be played by the keyboard, you cannot listen to the sound being edited.

2 Select the Timbre to be edited.

3 Press **EDIT**.

```

Edit Select
Timbre Tone
    
```

- 4 Press **◀/LOWER** to turn to "Timbre".

```
Tone Select
33: ▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲
```

- 5 Select the parameter to be edited with **◀DISPLAY▶**.
Pressing **▶** will advance the display, while **◀** will move to the previous displays.

- Tone Select
- Key Shift
- Fine Tune
- Bender Range
- Assign Mode

- 6 Change the value using **◀VALUE▶**.

While the value is being edited, it keeps blinking.

* If you wish to hear the Timbre as it sounded before editing it, press **COMPARE** during editing. Pressing it again will return to the editing mode.

- 7 To continue, and set a different parameter, repeat steps 5 and 6.

* To leave the editing mode, press **EXIT** and return to Play mode.

- 8 To write the edited version into memory, take the following writing procedure.

c. Writing procedure

Whenever you are finished editing and want to be able to use the settings again, write them into the internal memory or onto an optional memory card.

This section explains how to write into the internal memory. To write onto a memory card, read "Writing Data onto a memory card" on page 118 in the EDIT volume.

To write data into the internal memory, specify the destination Timbre number where the edited data is to be written. It is best to select the destination Timbre so that you can easily manage the Timbres later. For instance, you can arrange the Timbres in the same order as they will be played, or group together the same type of sounds. (By repeating the writing procedure, you can rearrange the order of Timbres.)

Writing data will automatically rewrite any previous Timbre. To retain the existing data, save it onto a memory card.

■ Memory Protect

The D-5 features the Memory Protect function that protects data in memory from accidental erasure. Memory Protect is default to ON. To write data into memory, turn the Memory Protect of the D-5 to off.

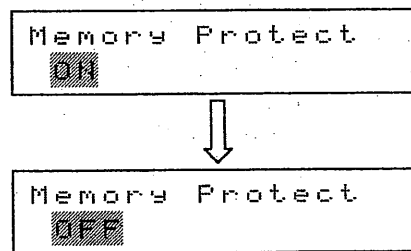
There are two different methods for turning Memory Protect off as follows.

- **Temporary Protect Off** Temporary Protect Off is used for turning the memory protect function off only at the time of the actual write, then automatically returning it to Protect on. This type of Protect OFF will be sufficient if you need to turn off the memory protect just once, such as when writing edited data. How to set the Temporary Protect Off is explained on page 112 "Writing into the Internal Memory".

- **Normal Protect Off** This is a normal type Protect Off that is retained until you turn it off, and therefore may be required when you need to write repeatedly.

To turn the Normal Protect off, do as follows.

- 1 Press **TUNE/FUNCTION**.
- 2 Press **◀DISPLAY▶** to call the Memory Protect display.
- 3 Set the Memory Protect to "OFF" using the **◀VALUE▶**.



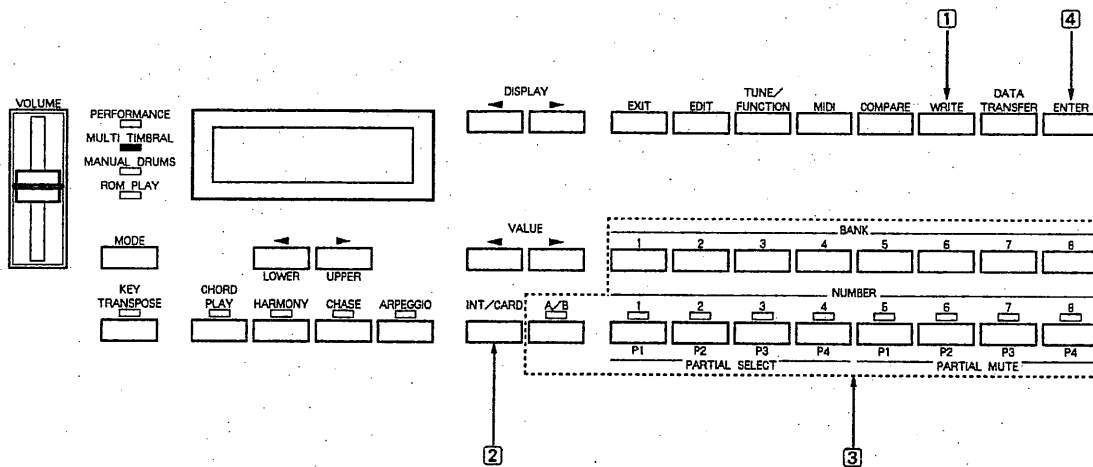
* Every time you finish writing, be sure to return Memory Protect to "ON", using a procedure similar to the above.

- 4 Press **EXIT** to return to the previous display.

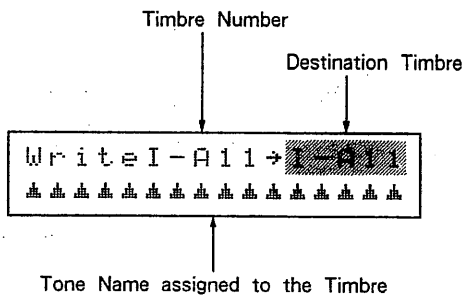
* When the unit is switched off, the Memory Protect state is returned to ON.

■ Writing data into the internal memory

To write an edited Timbre into the internal memory :
 You can enter the Timbre writing mode from Timbre editing (in any Timbre parameter display) or from play in the Multi Timbral mode.



- 1** Press **WRITE**.
 The Writing display is called.



- 2** When you have been editing a Timbre on a memory card, change from the Card "C" to Internal "I" by pressing **INT/CARD**.

* When writing a Timbre on a memory card into the internal memory, when a Tone in the c group has been used, it will automatically change to an i group Tone. (See page 103 "Relation between Timbre and Tone".) Therefore, if the make-up of the Tone in the internal memory is different from the Tone on the memory card, the Timbre will be consequently affected.

3 RHYTHM SETUP

This section explains how to change the rhythm assignment to key numbers, and how to play each rhythm voice. You can match the rhythm voice assignment of the performance data recorded in a sequencer to that of the D-5, or change the volume balance of rhythm voices.

Rhythm Tones can be assigned to Key Numbers C1 to C8. When external Note (Key) messages are received by the Rhythm Part, or when the keyboard of the D-5 is played in the Manual Drums mode, the Rhythm Tone assigned to that Key Number is played, resulting in rhythm performance.

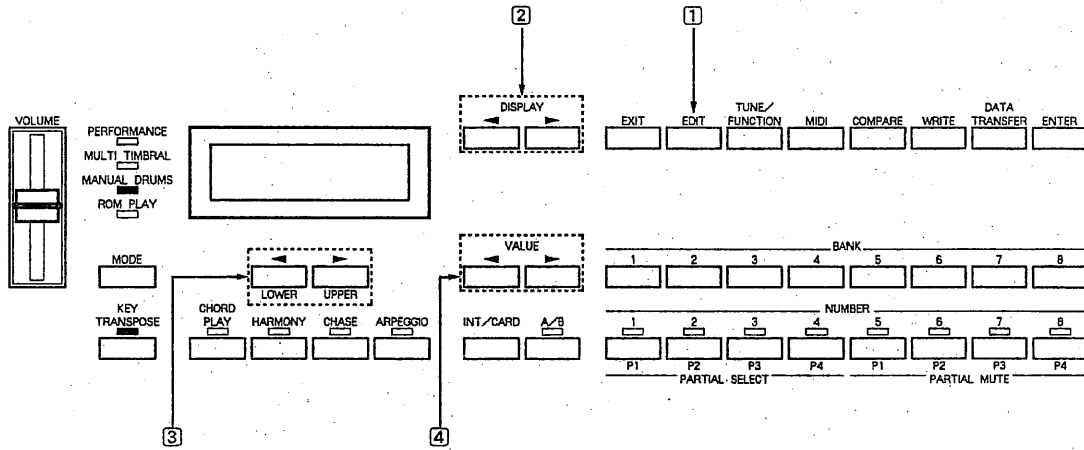
Each Key Number can have an independent Pan and Level, allowing rhythm performance at the desired balance. In addition to the Preset Rhythm Tones (63 kinds), original Tones you have programmed can also be used as Rhythm Tones.

1. Editing Procedure

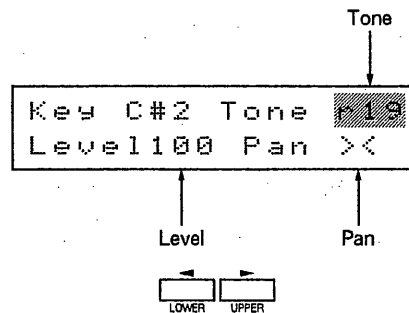
Rhythm Tone editing includes Tone, Level and Pan settings for each Key Number.

* The editing procedure does not automatically rewrite old data. Therefore, the edited data will be erased if the unit is switched off. To retain the edited version, take an appropriate writing procedure for each Key Number.

Before starting the editing procedure, check if the unit is set to the Manual Drums mode (the indicator of **MANUAL DRUMS** is lit).

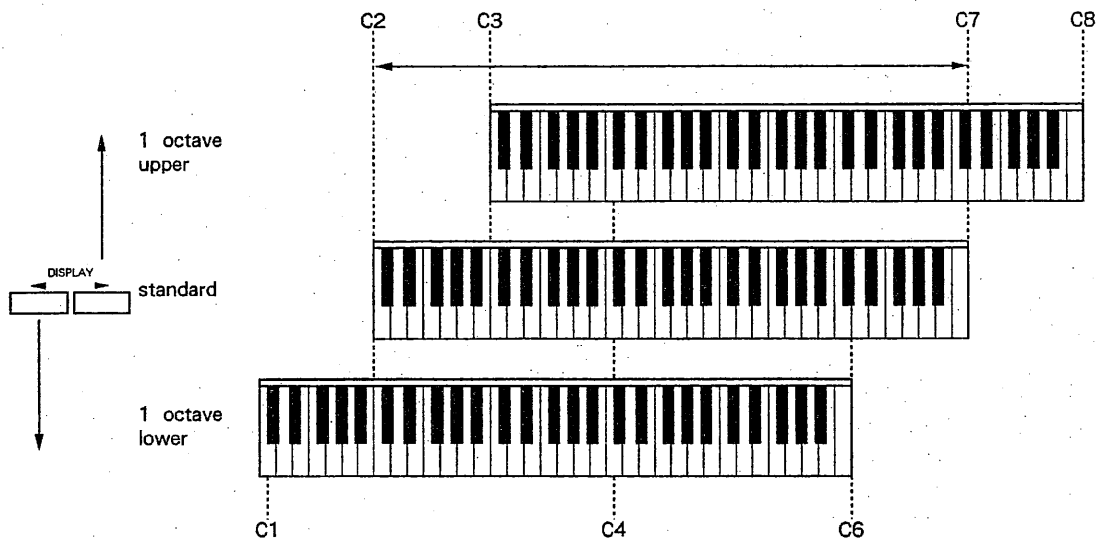


- 1 Press **EDIT**.
Play the keyboard, and the relevant rhythm Tone will be heard.
- 2 Press the key to be edited.
The Tone, Level and Pan set in that key will be displayed.



To select a key that exceeds the maximum range of the keyboard (C1—B1, C # 7—C8), transpose the pitch of the keyboard using **◀ DISPLAY ▶**, before assigning the key. When the keyboard is transposed, the Key Transpose Indicator lights up.

1. Editing Procedure



3 Press **◀/LOWER /UPPER▶** to select the parameter to be edited. The value of the selected parameter will blink.

4 Edit the value with **◀VALUE▶**.

Tone : A Rhythm Tone can be selected from the Preset Rhythm Tones r1 to r63 and Internal Tones i1 to i64. At OFF, no Rhythm Tone is assigned.

Level : 0 to 100 are valid, higher values increase the volume.

Pan : The positioning of the sound image in the stereo output can be set from 7> to <7. At ><, the position is in the center, <7 the far right and >7 the far left.

* Changing the Pan value may not affect the sound as expected in some Tones because of the Structure setting (page 123).

* When using a Tone made of only one Partial, only 8 panning positions are available.

* When a Rhythm Tone from the internal memory is used, the pitch may be changed depending on the key assigned to the Tone.

5 To write the edited version into memory, take the following writing procedure.

To leave the editing mode, press **EXIT** and return to the Manual Drums mode.

[Preset Rhythm Tones]

No.	Rhythm Tones	Number of Partials
r01	Closed High Hat - 1	1
r02	Closed High Hat - 2	1
r03	Open High Hat - 1	2
r04	Open High Hat - 2	2
r05	Crash Cymbal	2
r06	Crash Cymbal (short)	1
r07	Crash Cymbal (mute)	1
r08	Ride Cymbal	2
r09	Ride Cymbal (short)	1
r10	Ride Cymbal (mute)	1
r11	Cup	2
r12	Cup (mute)	1
r13	China Cymbal	2
r14	Splash Cymbal	1
r15	Bass Drum - 1	2
r16	Bass Drum - 2	1
r17	Bass Drum - 3	2
r18	Bass Drum - 4	1
r19	Snare Drum - 1	1
r20	Snare Drum - 2	1
r21	Snare Drum - 3	1
r22	Snare Drum - 4	2
r23	Snare Drum - 5	1
r24	Snare Drum - 6	1
r25	Rim Shot	1
r26	Brush - 1	2
r27	Brush - 2	2
r28	High Tom Tom - 1	1
r29	Middle Tom Tom - 1	1
r30	Low Tom Tom - 1	1
r31	High Tom Tom - 2	1
r32	Middle Tom Tom - 2	1
r33	Low Tom Tom - 2	1
r34	High Tom Tom - 3	2
r35	Middle Tom Tom - 3	2
r36	Low Tom Tom - 3	2
r37	High Pitch Tom Tom - 1	1
r38	High Pitch Tom Tom - 2	1
r39	Hand Clap	1
r40	Tambourine	1
r41	Cowbell	1
r42	High Bongo	1
r43	Low Bongo	1
r44	High Conga (mute)	1
r45	High Conga	1
r46	Low Conga	1
r47	High Timbale	1
r48	Low Timbale	1
r49	High Agogo	1
r50	Low Agogo	1
r51	Cabasa	1
r52	Maracas	1
r53	Short Whistle	2
r54	Long Whistle	2
r55	Quijada	3
r56	Claves	1
r57	Castanets	2
r58	Triangle	2
r59	Wood Block	1
r60	Bell	2
r61	Native Drum - 1	1
r62	Native Drum - 2	1
r63	Native Drum - 3	1
OFF		0

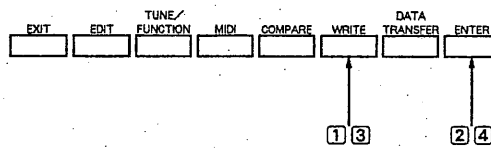
[Preprogrammed Rhythm Setup]

Rhythm Tones (Tone No.)	Note Number
Native Drum - 3 (r63)	97
Native Drum - 2 (r62)	96
Native Drum - 1 (r61)	95
Ride Cymbal (short) (r09)	94
High Tom Tom - 3 (r34)	93
Crash Cymbal (short) (r06)	92
Middle Tom Tom - 3 (r35)	91
Closed High Hat - 2 (r02)	90
Low Tom Tom - 3 (r36)	89
Snare Drum - 6 (r24)	88
Snare Drum - 5 (r23)	87
Snare Drum - 4 (r22)	86
Bass Drum - 4 (r18)	85
Bass Drum - 3 (r17)	84
Bell (r60)	83
Wood Block (r59)	82
High Pitch Tom Tom - 1 (r37)	81
Triangle (r58)	80
High Pitch Tom Tom - 2 (r38)	79
Castanets (r57)	78
Brush - 2 (r27)	77
Brush - 1 (r26)	76
Claves (r56)	75
Cup (mute) (r12)	74
Quijada (r55)	73
Long Whistle (r54)	72
Short Whistle (r53)	71
Maracas (r52)	70
Cabasa (r51)	69
Low Agogo (r50)	68
High Agogo (r49)	67
Low Timbale (r48)	66
High Timbale (r47)	65
Low Conga (r46)	64
High Conga (r45)	63
High Conga (mute) (r44)	62
Low Bongo (r43)	61
High Bongo (r42)	60
Ride Cymbal (mute) (r10)	59
Snare Drum - 3 (r21)	58
Crash Cymbal (mute) (r07)	57
Cowbell (r41)	56
Splash Cymbal (r14)	55
Tambourine (r40)	54
Cup (r11)	53
China Cymbal (r13)	52
Ride Cymbal (r08)	51
High Tom Tom - 2 (r31)	50
Crash Cymbal (r05)	49
High Tom Tom - 1 (r28)	48
Middle Tom Tom - 2 (r32)	47
Open High Hat - 1 (r03)	46
Middle Tom Tom - 1 (r29)	45
Open High Hat - 2 (r04)	44
Low Tom Tom - 2 (r33)	43
Closed High Hat - 1 (r01)	42
Low Tom Tom - 2 (r30)	41
Snare Drum - 2 (r20)	40
Hand Clap (r39)	39
Snare Drum - 1 (r19)	38
Rim Shot (r25)	37
Bass Drum - 2 (r16)	36
Bass Drum - 1 (r15)	35

2. Writing Procedure

This section explains how to write the edited rhythm setting to each Key Number.

When you have edited rhythm data, take the following procedure.



- 1** Press **WRITE**.

```
Write C#2 Setup
Sure?          Enter
```

- 2** Press **ENTER**.

If the Memory Protect has remained ON, the display will respond as shown below.

If the Memory Protect has been turned OFF, writing will be done then the editing display is retrieved.

```
Turn Protect off
once? Write/Exit
```

* To leave the editing mode, press **EXIT** to return to the previous editing display.

- 3** Press **WRITE**.

The unit is set to Temporary Memory Protect Off and returns to the display of **1**.

- 4** Press **ENTER**.

When the writing is properly done, the display responds as shown below, then returns to the editing display.

```
Completed
```

4 TONE SETTING

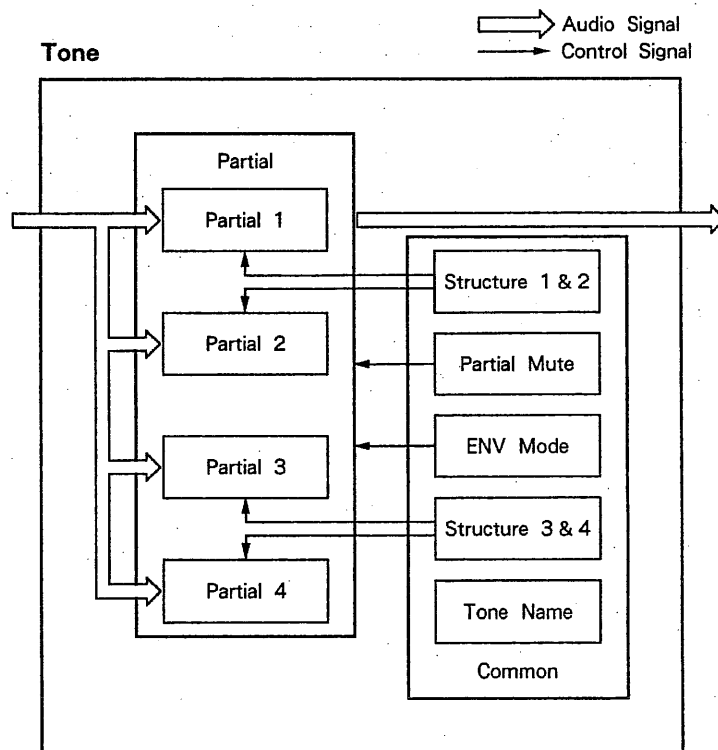
A Tone consists of various parameters. This section explains the basic concept of a Tone and simple Tone editing.

1. What is a Tone ?

A Tone is a unit of sound. As mentioned before, a Timbre, Patch or Rhythm Voice is made of a Tone or Tones. The following explains how a Tone is structured.

a. The structure of a Tone

A Tone consists of four Partials and a Common block.



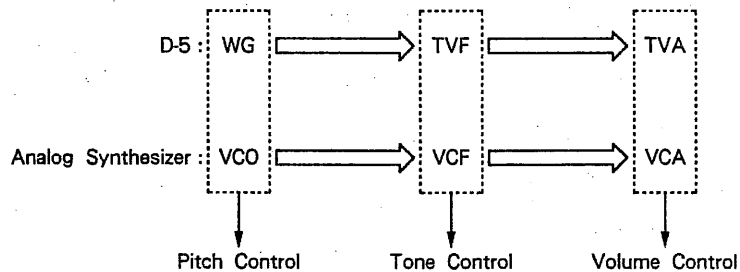
■ Partial

Partials are combined in pairs, and two pairs of partials form a Tone. One Partial can be thought of as functioning much like a conventional synthesizer.

It has been difficult to create realistic acoustic sounds with synthesizers of the past, because an acoustic sound is comprised of many different sounds. For instance, a piano sound consists of the attack portion, sustained portion, decaying portion, and remaining portion. Also, pitch (sound range) is another element that causes tone alteration in one sound.

Conventional synthesizers used to make such complicated sounds from one waveform, but the D-5 creates a sound by making different portions of the sound in Partials, then combines those.

Each Partial has a Wave Generator (WG), Time Variant Filter (TVF), and Time Variant Amplifier (TVA). These function similarly to the VCO, VCF and VCA of an analog synthesizer.



Partials can use either of two sound generators, Synthesizer Sound Generator or PCM Sound Generator. "Structure" selects which of the two sound generators is to be used.

Depending on which generator is selected, different parameters will be used. Some parameters used for the synthesizer sound generators are irrelevant to the PCM generator.

Synthesizer Sound Generator :

This Sound Generator behaves like a conventional analog synthesizer, where you can make sounds using sawtooth waves or square waves.

PCM Sound Generator :

This allows you to make sounds using PCM sounds. There are 256 attractive preprogrammed PCM sounds.

● **Wave Generator (WG)** In the Wave Generator, the basic pitch and waveform are controlled. The envelope curve for pitch or vibrato are also controlled.

● **Time Variant Filter (TVF)**

This filter processes the basic waveform of the synthesizer sound generator set in the WG and changes tones. The envelope curve of a tone is also controlled.

The sound sources of the PCM sound generator have their own tones, and therefore cannot be controlled with the TVF.

● **Time Variant Amplifier (TVA)**

This controls the volume. Control of the envelope curve of the level change is more important than control of the basic volume. Attack, sustain and decay portions of a sound are set here.

1. What is a Tone?

■ Structure

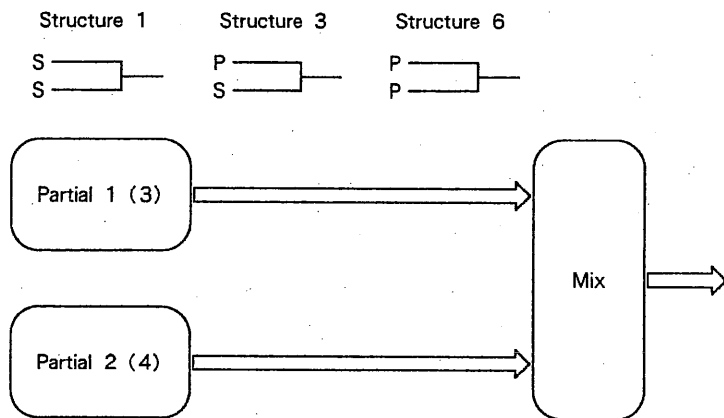
A Tone consists of up to four Partials. An important parameter in the Common group called "Structure" decides how each Partial should be combined or which sound generator should be used.

Functions of Structure

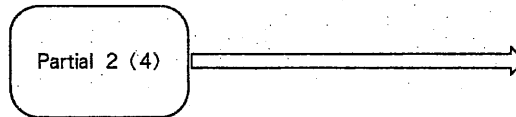
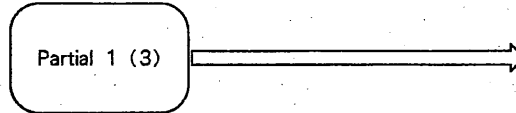
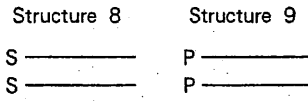
- ① **Selects which of the sound generators ;**
synthesizer sound generator or PCM sound generator, is to be used in each Partial.
- ② **Decides how each pair of Partials should be combined.**
The four Partials are combined in pairs and two pairs of Partials form a Tone. There are two Structures in each Tone, to decide how the two pairs should be made from the four Partials. Structures 1 & 2 determine how to combine Partials 1 and 2, and Structures 3 & 4 determine how to combine Partials 3 and 4.

There are four different ways to combine Partials.

○ Two Partials are mixed



Two Partial are output in stereo



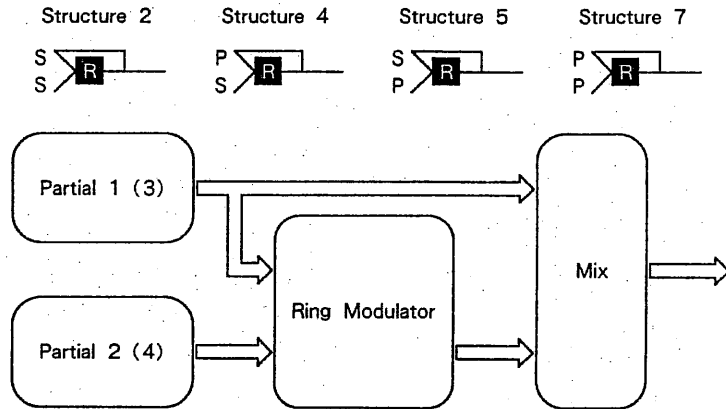
This combination is effective for playing Timbres or Rhythm Tones in stereo. However, if using this setting in mono output, it will be mixed on output (same as above).

* When this Structure is selected, the sound placement of each Partial is automatically set as follows depending on the Pan setting. (See page 69 "Pan and Level".)

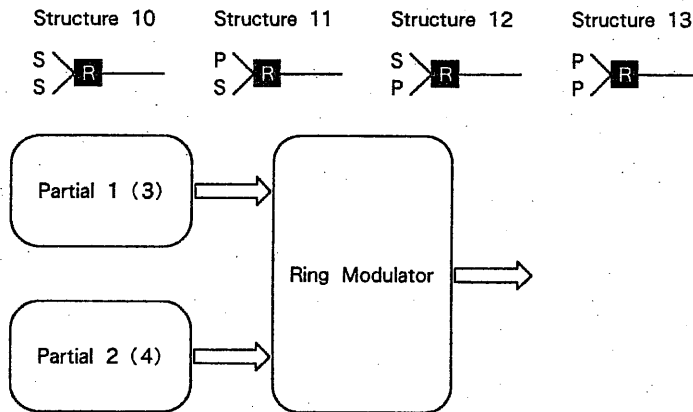
Value of Pan	Actual Value	
	Partial 1 (3)	Partial 2 (4)
<7	<7	<7
<6	<5	<7
<5	<3	<7
<4	<1	<7
<3	1>	<7
<2	3>	<7
<1	5>	<7
><	7>	<7
1>	7>	<5
2>	7>	<3
3>	7>	<1
4>	7>	1>
5>	7>	3>
6>	7>	5>
7>	7>	7>

1. What is a Tone?

○ Partial 1 (3) is mixed with the ring modulated sound of two partials.



○ Two Partial are ring-modulated and sent out.



* The Ring Modulator can be effectively used for creating metallic sounds, since it can increase harmonics by multiplying two Partial.

1. What is a Tone?

The D-5 provides 13 different Structures numbered 1 through 13. Select any of these.

S : Synthesizer Sound Generator
P : PCM Sound Generator

Structure Number	Partial 1 (3)	Partial 2 (4)	Combination of two Partials	Block Diagram
1	S	S	Mixture of Partial 1 (or 3) and Partial 2 (or 4).	
2	S	S	Mixture of Partial 1 (or 3) and ring-modulation.	
3	P	S	Mixture of Partial 1 (or 3) and Partial 2 (or 4).	
4	P	S	Mixture of Partial 1 (or 3) and ring-modulation.	
5	S	P	Mixture of Partial 1 (or 3) and ring-modulation.	
6	P	P	Mixture of Partial 1 (or 3) and Partial 2 (or 4).	
7	P	P	Mixture of Partial 1 (or 3) and ring-modulation.	
8	S	S	Partial 1 (or 3) and Partial 2 (or 4) are output in stereo.	
9	P	P	Partial 1 (or 3) and Partial 2 (or 4) are output in stereo.	
10	S	S	Partial 1 (or 3) and Partial 2 (or 4) are ring-modulated then output.	
11	P	S	Partial 1 (or 3) and Partial 2 (or 4) are ring-modulated then output.	
12	S	P	Partial 1 (or 3) and Partial 2 (or 4) are ring-modulated then output.	
13	P	P	Partial 1 (or 3) and Partial 2 (or 4) are ring-modulated then output.	

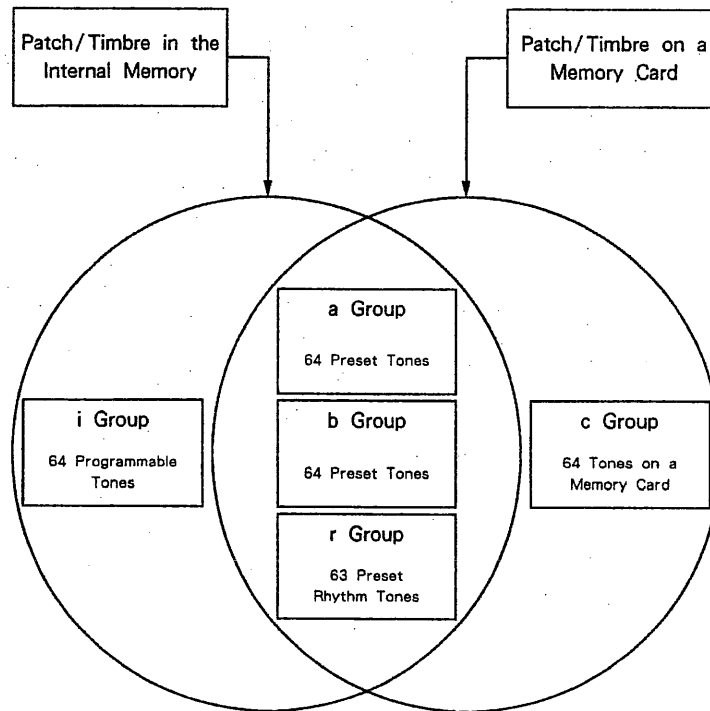
2. Editing Procedure

You can edit a Tone either in the Performance mode or Multi Timbral Mode.

There are various Tone groups, a, b, r, i and c. The Tones available for a Timbre or Patch differ depending on which memory, the internal memory or memory card, they belong to.

An edited Tone can be written into a Tone in group i or group c (RAM card). It cannot be written into the a, b, or r groups.

* The editing procedure does not automatically rewrite old data. Therefore, the edited data will be erased if the unit is switched off. To retain the edited version, take an appropriate writing procedure (page 140).



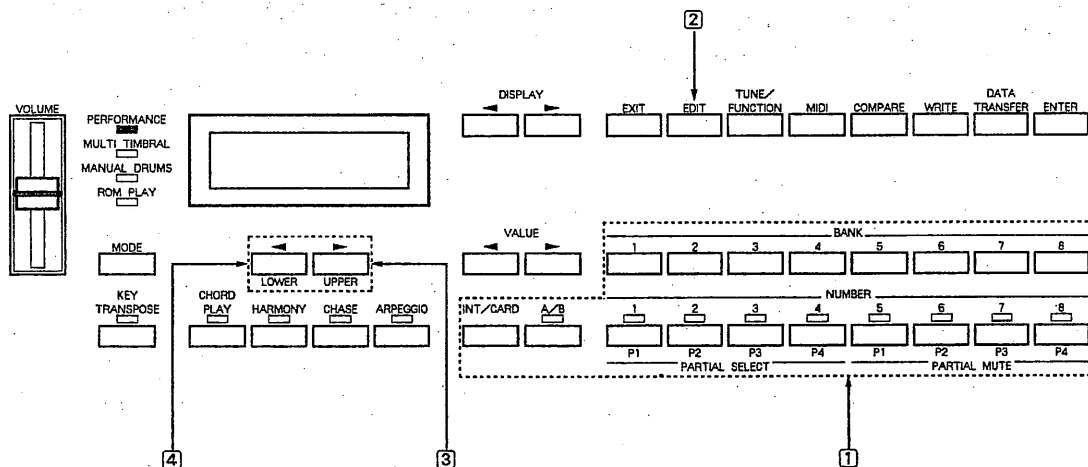
a. Basic editing procedure

Select a Patch/Timbre which is similar to the sound you wish to make, and edit it. The following explains the basic procedure for Tone editing.

■ Tone Selection

The method of selection for a Tone to be edited differs between the Performance mode and Multi Timbre mode.

● How to select a Tone in the Performance Mode



1 Select the Patch that contains the Tone you want.

2 Press **EDIT**.

```
Edit Select
Patch Tone
```

3 Press **UPPER/▶** to select "Tone".

```
Edit Tone Select
Lower Upper
```

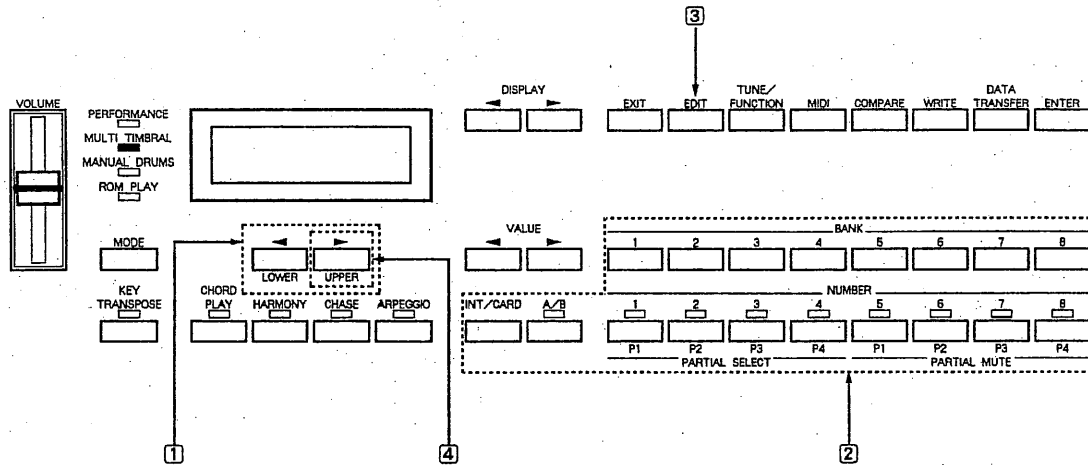
- 4 To edit the Lower Tone, press **◀/LOWER**, and to edit the Upper Tone, press **UPPER/▶**.

```
Common  
Select Parameter
```

The Tone editing display appears.

Go to the following "How to select a parameter and edit it".

● How to select a Tone in the Multi Timbral Mode



1 Turn to the Keyboard display.

If you do not select a part which can be played by the keyboard, you cannot listen to the sound being edited.

2 Select the Timbre that contains the Tone you want.

3 Press **EDIT**.

```

Edit Select
Timbre Tone
  
```

4 Press **UPPER/▶** to select "Tone".

```

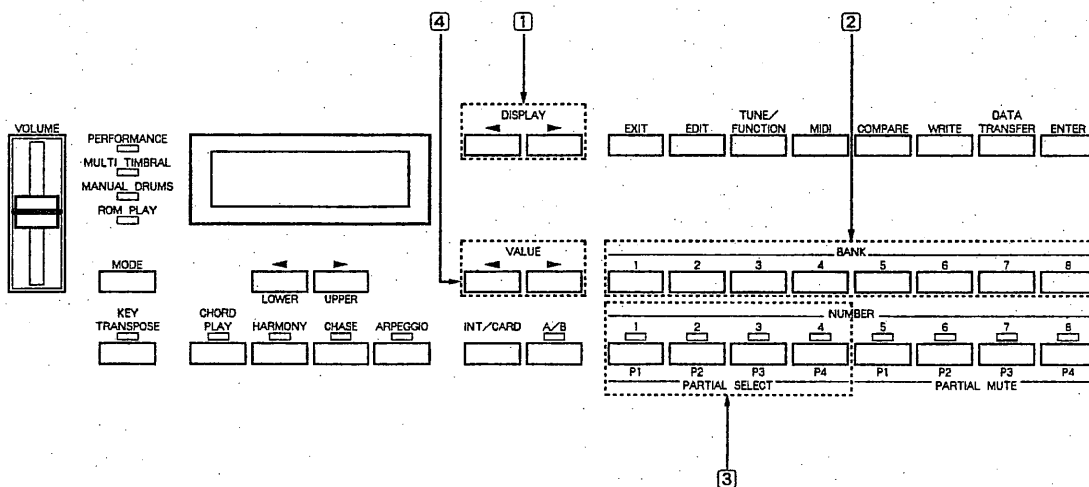
Common
Select Parameter
  
```

The Tone editing display appears.

Go to the following "How to select a parameter and edit it".

How to select a parameter and edit it

The following explains how to edit the values of a parameter.



1 Press **◀DISPLAY▶** to call the group that contains the parameter you wish to edit. Parameters are divided into the following eight groups.

- ① **Common Group**
This group includes Structure, ENV Mode, Tone Name etc.
- ② **WG Pitch/Modulation Group**
This group controls the basic Pitch, Vibrato, Pitch Bender, etc.
- ③ **WG Form/Pitch Envelope Group**
This group sets the Waveform and how to use the Pitch Envelope etc.
- ④ **WG Pitch Envelope Group**
This sets the envelope of pitch.
- ⑤ **TVF Frequency Group**
This group sets how to change the sounds of the synthesizer sound generator. However, the parameters in this group do not affect the PCM sound generator at all.
- ⑥ **TVF Envelope Group**
This group sets the envelope of tone. The parameters in this group do not work on the PCM sound generator.

⑦ TVA Level Group

This group sets the basic Volume, volume change caused by Key Follow and Velocity, etc.

⑧ TVA Envelope Group

This group controls the envelope of volume.

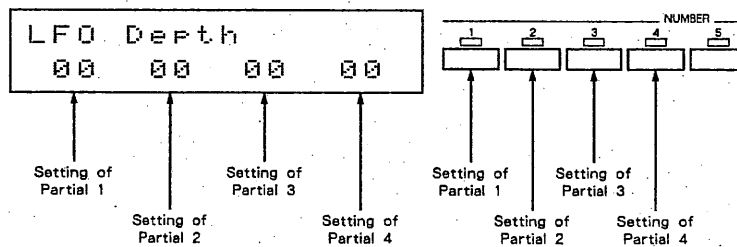
- ② Select the parameter to be edited by using BANK ①—⑧.
Parameters correspond to the BANK as shown below.

Group	BANK							
	1	2	3	4	5	6	7	8
Common	Tone Name	Structure 1 & 2	Structure 3 & 4	ENV Mode				
WG Pitch/Modulation	Pitch Coarse	Pitch Fine	Key Follow (Pitch)	LFO Rate	LFO Depth	LFO Modulation Sensitivity	Bender Switch	
WG Form/Pitch ENV	Waveform	PCM Wave Bank	PCM Wave No.	Pulse Width	PW Velocity	ENV Depth	ENV Velocity	ENV Key Follow (Time)
WG Pitch ENV	Time 1	Time 2	Time 3	Time 4	Level 0	Level 1	Level 2	End Level
TVF Frequency	Cutoff Frequency	Resonance	Key Follow	Bias Point	Bias Level	ENV Depth	ENV Velocity	ENV Key Follow (Depth)
TVF ENV	Key Follow (Time)	Time 1	Time 2	Time 3	Time 4	Level 1	Level 2	Sustain Level
TVA Level	Level	Velocity	Bias Point 1	Bias Level 1	Bias Point 2	Bias Level 2	ENV Velocity Follow (Time)	
TVA ENV	Key Follow (Time)	Time 1	Time 2	Time 3	Time 4	Level 1	Level 2	Sustain Level

If you have selected Partial parameters, the values of the four Partial parameters are shown in the display.

3 Select the Partial to be edited with **NUMBER** **1**—**4**.

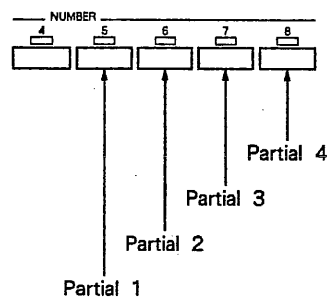
The indicator of the pressed button will light up, and the value (blinking) of the parameter can be edited. Each time you press a button, the corresponding indicator lights up and goes out alternately. It is possible to edit more than one Partial simultaneously.



● **Partial Mute**

The Partial Mute is one of the Tone parameters that allows you to mute each Partial by pressing the corresponding **NUMBER** **5**—**8**. The Partial whose **NUMBER** button stays dark is not being used. The Partial Mute state also determines the number of Partials active in the Tone. That is, the maximum number of voices that can be played changes depending on how many Partials are currently in use.

Pressing a button will turn off (the indicator lights up) and on (the indicator goes out) the Mute function of the corresponding Partial. You may use this function to compare two Partials, as well as for muting Partials to listen to only specific Partials.



* Parameters of the Partial currently muted can be edited just the same.

* When the Ring Modulator is in use, muting one of the Partials used will cause the other unmuted Partial to be output without passing through the Ring Modulator.

To check the effect of the Ring Modulator, you must turn mute off of the corresponding Partial.

4 Change the value of the selected parameter with **◀VALUE▶**. To edit more than one Partial with Partial Select, the value of each Partial can be edited relatively. For instance, if you edit two partials whose values are 03 and 15 at the same time, the values change as 04 and 16, 05 and 17, 06 and 18, etc.

* If you wish to listen to the Tone as it was before being edited, press **COMPARE**. To return to the editing mode, press **COMPARE** again.

* To leave the editing mode, press **EXIT**. If you have not written the edited data, the previous data will be retrieved the moment you select a different Tone.

5 To write the edited version into memory, take the appropriate writing procedure (page 140).

b. Simple editing

For easier and quicker editing, you may select a Tone which is similar to the sound you wish to create, and edit a part of the data. This section explains key points for effective Tone editing.

■ Check the following before Tone editing

Before actually editing a Tone, check the following points to study how the Partials are being used. If you do not understand the structure of the Partials, you cannot tell which Partials to edit.

① Check the Key Mode

When entering Tone editing from the Performance mode, you may not be able to make a desired sound if editing a Tone only.

Specifically, in the Dual mode, this is a very important check point because Dual mixes two Tones to make one Tone. In the Dual mode, check how each Tone works by changing the Tone Balance, etc. (After you have checked, return the parameters to the previous values.)

② Check the Partial Mute

First, Check which Partials are currently muted. This is important because the muted Partials are, naturally, not used in the Tone.

The Partial Mute function will be quite often used during editing, therefore, it may be wise to make a memo unless you have a very good memory.

③ Check Partials

Secondly, using the Partial Mute function, listen to the sound of each Partial in use to check how Partials work in the Tone.

There are many different Partial combinations.

The following are common examples :

- Combination of the same types of sounds
- Combination of attack and sustain portions
- Combination of the lower and upper sound range of the keyboard
- Combination of the strongly and weakly hit keys

④**Check the Structure**

Finally, check the Structure setting.

Check how each Partial is used, how the Partials are combined and how the Ring Modulator functions. Particularly when the PCM sound generator is used, you must be careful, as the functions of some parameters, such as some related to TVF, become ineffective.

When the setting of a Structure is altered, the source waveform may be changed, resulting in drastic changes in the sound.

Basically, for the best chance of success when editing, do not touch the Structure setting.

■ Change Sound

To change sound, check if the Partial to be edited uses the synthesizer sound generator or PCM sound generator with its Structure. Depending on which is used, the method of editing will differ. To be able to hear the sound change clearly, mute the other Partials.

Do as follows in the Tone Editing mode.

● When the Synthesizer Sound Generator is used :

Change the sound using the TVF Frequency and Resonance.

- 1 Press **◀** DISPLAY **▶** to change to the TVF Frequency Group display.

```
TVF Freq/ENU
Select Parameter
```

- 2 Press BANK **1** to select the Cutoff Frequency parameter.

```
TVF Cutoff Freq
50 70 90 50
```

- 3 Change the value by pressing **◀** VALUE **▶**.

The value can be set from 0 to 100.

Higher values make brighter (sharper) sound and lower values make darker (softer) sound. (If it is set too low, no sound will be heard.) How the Cutoff Frequency affects the sound is related with the Resonance, so, you must control both parameters.

- 4 Press BANK **2** to select the Resonance, then change the value with **◀** VALUE **▶**.

The value can be set from 0 to 30.

When the Resonance is set higher, the sound change caused by Cutoff Frequency is more conspicuous.

● When the PCM Sound Generator is used :

You can use any of the preprogrammed 256 PCM sounds.
Each Bank (1 and 2) stores 128 PCM sounds.

* To check which PCM sounds are stored in the Banks/Numbers,
see page 153 in the EDIT volume.

- 1 Press **◀DISPLAY▶** to change to the WG Form/Pitch ENV display.

```
WG Form/ENV
Select Parameter
```

- 2 Press BANK **2** to select the PCM Wave Bank.

```
WG PCM Wave Bank
 1  1  2  2
```

- 3 Select a Bank, 1 or 2, by pressing **◀VALUE▶**.

- 4 Press BANK **3** to select the PCM Wave Number.

```
WG PCM Wave No.
 01 01 02 03
```

When only one Partial has been selected with Partial Select, the name of the PCM sound will also be displayed.

```
WG PCM Wave No.
1- 01 : B=Drum1
```

- 5 Select a PCM sound with **◀VALUE▶**.

Any from 1—128 can be selected.

PCM sounds include percussive sounds such as drum, piano and flute, sustained type sounds, special effects, etc.

■ Create Vibrato Effect

To add deeper vibrato effect, edit the LFO Depth, and LFO Rate of the Partial that generates sustained sound. When the vibrato is controlled with the bender lever, edit the LFO Modulation Sensitivity of the Partial that generates sustained sound.

- 1 Press **◀** DISPLAY **▶** to change to the WG Pitch/Modulation display.

```
WG Pitch/Mod
Select Parameter
```

- 2 Press BANK **5** to select the LFO Depth.

```
LFO Depth
100 30 99 50
```

To control the vibrato with the bender lever, press BANK **6** to select LFO Modulation Sensitivity.

- 3 Set the depth of the vibrato **◀** VALUE **▶**.
It can be set from 0 to 100. Higher values will make the effect deeper.

- 4 Press BANK **4** to select the LFO Rate Parameter.

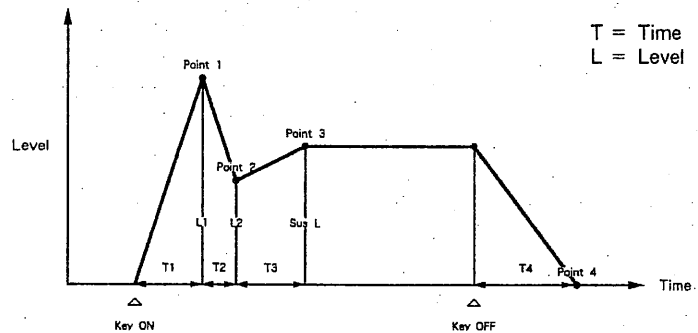
```
LFO Rate
50 100 99 50
```

- 5 Set the rate of the vibrato with **◀** VALUE **▶**.
It can be set from 0 to 100. Higher values will make the effect quicker.

Change the Attack Time

Using a TVA envelope that controls volume, you can make the attack time of a sound longer or shorter. However, this parameter hardly affects a PCM sound as it has a fixed volume change curve.

The TVA Envelope determines the volume change in accord with the Times (T1, T2, T3 and T4) and Levels (L1, L2, and Sus L). First, check the value of each point and draw a curve.



- 1 Press **◀DISPLAY▶** to change to the TVA ENV display.

```
TVA ENV
Select Parameter
```

- 2 Press BANK **2** to select Time 1.

```
TVA ENV Time 1
100 50 20 00
```

- 3 Change the attack time with **◀VALUE▶**.

It can be set from 0 to 100. Higher values make the attack time longer and lower values make it shorter. You can go further, and edit Time 2 and Level 2 to change the attack time more.

* If the level of two adjacent points are set to similar values, the time between these two points may prove to be shorter than what is actually set, or even zero.

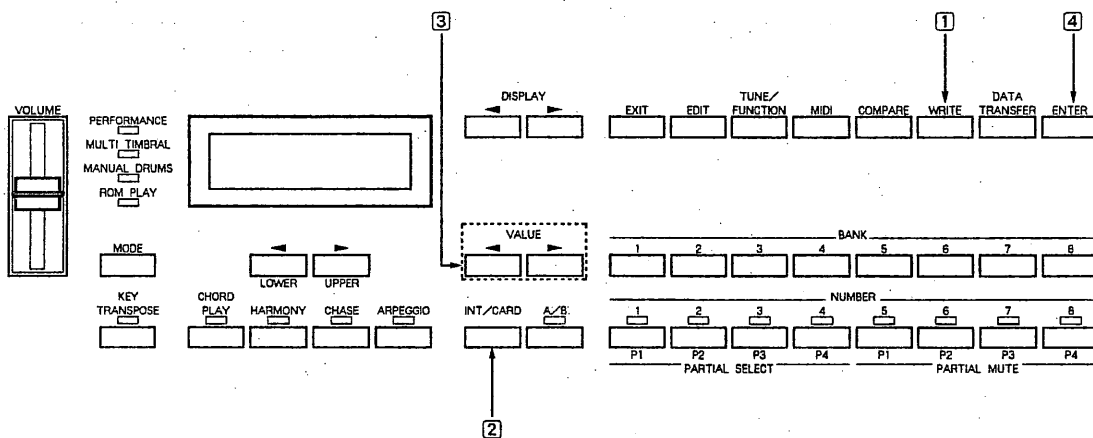
3. Writing Procedure

If you wish to retain the edited data for later use, write it into the internal memory or onto an optional memory card.

This section explains how to write into the internal memory. To write onto a memory card, read "Writing Data onto a memory card" on page 118 in the EDIT volume.

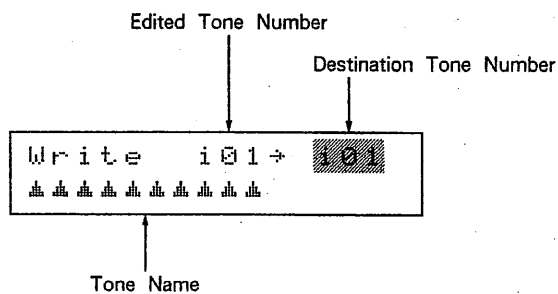
An edited Tone can be written into group i (internal memory) or in group c (onto a RAM card), but cannot be written into a Preset Tone in group a, b, r or onto a ROM card.

From the Tone editing mode, do as follows.



1 Press **WRITE**.

The Tone Writing display is called.



* If you have edited a Preset Tone, the destination Tone number is not shown in the display. (*** appears instead.)

2 To select the destination group where the edited Tone is to be written, change from the Card (c) to Internal (i) by pressing **INT/CARD**.

3 Specify the destination Tone number where the edited version is to be written, using **◀VALUE▶**.
Select a Tone number from 1—64.

If you wish to listen to the destination Tone before overwriting it, do as follows.

① Press **COMPARE**.

```
Compare to 101
▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲▲
```

Now, the relevant sound will be heard by playing any key on the keyboard. At this stage, you can listen to a different Tone by changing Tones.

② Press **COMPARE** to return to the Writing display.

4 Press **ENTER**.

○ If the Memory Protect has been turned OFF, the display responds as shown below for a while, then returns to a Play mode display.

```
Completed
```

○ If the Memory Protect remains ON, the display responds as shown below.

```
Turn Protect off
once? Write/Exit
```

If you wish to set the Temporary Protect OFF, press **WRITE** then **ENTER**.

* If you wish to leave the editing mode, press **EXIT** to return to the previous display.

* When the write operation was not successful, an error message will appear. See page 144 "Error Messages" in the EDIT volume to resolve it.

SPECIFICATIONS

D-5 : Multi Timbral Linear Synthesizer
(with built-in Rhythm Sound)

● **Keyboard**

61 Keys (With Velocity)

● **Sound Source**

LA System

Maximum Voices : 32 Voices

● **Internal Memory**

Synthesizer Section

Patches : 128
Timbres : 128
Preset Tones : 128
Programmable Tones : 64

Rhythm Section

Preset Rhythm Tones : 63
Setups : 85 Keys
(C1 to C8)

● **Memory Card (M-256D, M-256E)**

Patches : 128
Timbres : 128
Programmable Tones : 64
Rhythm Setups : One set

● **Display**

2 lines, 16 letter (back-lit)

● **Dimensions**

978 (W) × 279 (D) × 84 (H) mm
38-1/2" × 11 × 3-4/8"

● **Weight**

6.6 kg/14 lb 8 oz

● **Current Draw**

800 mA (9V DC)

● **Accessories**

AC Adaptor
ACI-120 (120V)
ACI-220 (220V)
ACB-240A, ACB-240E (240V)
Owner's Manual (PLAY/EDIT)
Connection Cable (PJ1-M)

● **Options**

Memory Card (RAM) M-256D, M-256E
Memory Card (ROM) PN-D10 Series
Carrying Case SHC-2
Carrying Bag CB-10
Programmer PG-10
Stereo Headphones RH-100
Pedal Switch DP-2, DP-6
MIDI/SYNC Cable MSC-07,
15, 50, 100

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